



Regional Clusters of Opportunity: Report

DRAFT

Presented to the California Workforce Investment
Board on Behalf of the Workforce Collaborative of
California's Central Coast (W4C)

May 2011



TABLE OF CONTENTS

List of Figures.....	ii
List of Tables.....	iii
Introduction	1
Results of Regional Employer Survey	2
Respondent Profile	2
Growth Expectations.....	5
Use of Technology.....	6
Recruitment Practices.....	8
Workforce Challenges.....	9
Occupational Assessment	11
Findings from Executive Interviews with Stakeholders	24
Background	24
Methodology	24
Part 1: Research Findings for Energy & Related Green Industries.....	25
Part 2: Research Findings for Agriculture & Wineries	39
Part 3: Research Findings for Tourism.....	58
Appendix A: List of Stakeholders and Employers that Participated in Workshops and Executive Interviews.....	A-1
Appendix B: Summary of Employer Workshops	B-1
Appendix C: Topline Results from Survey	C-1
Appendix D: Methodology for Regional Employer Survey	D-1
Appendix E - 1: Executive Interview Guide & Notes: Green Industry	E-1
Appendix E - 2: Executive Interview Guide & Notes: Agriculture	E-18
Appendix E - 3: Executive Interview Guide & Notes: Tourism.....	E-41
Appendix F: Regional Employer Project Update, October 2011	F-1
Appendix G: Regional Action Clinic #1: Summary, April 2010	G-1
Appendix H: Regional Action Plan Summary, February 2011	H-1
Appendix I: Regional Industry Focus, August 2010	I-1
Appendix J: Introduction to the Project Initiative, August 2010	J-1
Appendix K: Economic Impact Assessment of Economic Driver Industries, August 2010.....	K-1
Appendix L: Workforce and Economic Profile of Key Industry Clusters	L-1

LIST OF FIGURES

Figure 1 County.....	2
Figure 2 Industry	2
Figure 3 Industries Most Connected to	3
Figure 4 Number of Employees	4
Figure 5 Growth Expectations	5
Figure 6 Technology Profile.....	6
Figure 7 Most Important Technologies among those Supporting Development of New Technology	7
Figure 8 Non-Entry Level Recruitment Practice.....	8
Figure 9 Frequency of Recruiting Outside the Central Coast.....	8
Figure 10 Workforce Challenges	9
Figure 11 General Skill Deficiencies.....	10
Figure 12 Growth Expectations: Agriculture Occupations	12
Figure 13 Twelve-Month Growth Rate: Agriculture Occupations	12
Figure 14 Growth Expectations: Energy Occupations.....	13
Figure 15 Twelve-Month Growth Rate: Energy Occupations	13
Figure 16 Growth Expectations: Tourism Occupations	14
Figure 17 Twelve-Month Growth Rate: Tourism Occupations.....	14
Figure 18 Difficulty Hiring: Agriculture Occupations	15
Figure 19 Difficulty Hiring: Energy Occupations.....	16
Figure 20 Difficulty Hiring: Tourism Occupations	17
Figure 21 Typical Education Requirements: Agriculture Occupations.....	18
Figure 22 Typical Education Requirements: Energy Occupations	19
Figure 23 Typical Education Requirements: Tourism Occupations.....	20

LIST OF TABLES

Table 1 Industry by County.....	3
Table 2 Occupational Employment at Surveyed Firms	11
Table 3 Skills: Agriculture Occupations	21
Table 4 Skills: Energy Occupations	22
Table 5 Skills: Tourism Occupations	23
Table 6 Overview of Survey Methodology	D-1
Table 7 Central Coast Employment for Economic Driver Industries.....	K-1
Table 8 Central Coast Direct Economic Impact for Economic Driver Industries	K-2
Table 9 Agriculture in the Central Coast.....	K-2
Table 10 Agriculture in the Central Coast by County	K-2
Table 11 Tourism in the Central Coast	K-3
Table 12 Tourism in the Central Coast by County	K-3
Table 13 Military in the Central Coast.....	K-4
Table 14 Military in the Central Coast by County.....	K-4
Table 15 Central Coast Agriculture & Tourism: Baseline Employment Forecast.....	L-2
Table 16 Central Coast Agriculture & Tourism: Relative Industry Concentration	L-3
Table 17 Central Coast Agriculture & Tourism: Wages & Direct Economic Impact	L-3
Table 18 Central Coast Agriculture & Tourism: County Employment.....	L-4
Table 19 Central Coast Agriculture: National & Statewide Trends	L-4
Table 20 Central Coast Tourism: National & Statewide Trends	L-5
Table 21 Central Coast Agriculture: Most Employed Occupations.....	L-5
Table 22 Central Coast Agriculture: Fastest Growing Occupations	L-5
Table 23 Central Coast Tourism: Most Employed Occupations.....	L-6
Table 24 Central Coast Tourism: Fastest Growing Occupations.....	L-6
Table 25 Central Coast Energy: Baseline Employment Forecast.....	L-8
Table 26 Central Coast Energy & RREI: Relative Industry Concentration	L-8
Table 27 Central Coast Energy & RREI: Wages & Direct Economic Impact	L-9
Table 28 Central Coast Energy & RREI: County Employment.....	L-9
Table 29 Central Coast Energy & RREI: National & Statewide Trends	L-9
Table 30 Central Coast Energy & RREI: Most Employed Occupations.....	L-10
Table 31 Central Coast Energy & RREI: Fastest Growing Occupations	L-10
Table 32 Central Coast Energy: Baseline Employment Forecast.....	L-11
Table 33 Central Coast Energy & RREI: Relative Industry Concentration	L-12
Table 34 Central Coast Energy & RREI: County Employment.....	L-13
Table 35 Central Coast Energy & RREI: National & Statewide Trends	L-13
Table 36 Central Coast Energy & RREI: Most Employed Occupations.....	L-14
Table 37 Central Coast Energy & RREI: Fastest Growing Occupations	L-15

INTRODUCTION

The four Workforce Investment Boards of California Central Coast representing the counties of Monterey, San Luis Obispo, Santa Barbara and Ventura have recently established a collaborative relationship to strengthen workforce and economic development on the Central Coast. The Workforce Investment Boards of San Benito and Santa Cruz counties are also closely aligned with this collaboration. Out of the collaboration has come an association, entitled the Workforce Collaborative of California's Central Coast (W4C). The purpose of this association is to identify shared strategic priorities and work collaboratively to leverage resources between partners to complement the regional response to grant-related effort.

The workforce and economic development opportunities associated with the greening economy was one of the initial priorities of the W4C partners. When the State of California instituted a regional initiative based upon the identification of regional industry clusters of opportunity the W4C partners agreed that this could serve as a valuable foundation to develop a regional response for supporting the region's green industry growth. The W4C partners saw this initiative as an opportunity to support the growth of emerging and established green businesses, train new and current workers on the evolving skills required by green employers and support green entrepreneurs looking to create new green businesses in the Central Coast.

The purpose of this report is to document what has been learned and developed over the last 14 months as the W4C partners have embarked upon the Regional Industry Clusters of Opportunity: Green Initiative for the Central Coast. The report includes;

- Several documents that illustrate the extensive process of identifying, defining and prioritizing the regional industry clusters of opportunity.
- A description of the extensive efforts and results of engaging with regional employers and stakeholders through meetings, executive interviews and a regional survey of over 225 employers.
- A description of the strategies, requirements, and resources (including investments) that have been identified and developed through the course of this initiative to meet the objectives of supporting the growth of green businesses and the development of new green businesses in the Central Coast.

This report is meant to describe the initial efforts of a new collaborative that has come together to take on the shared priority of supporting the Central Coast's evolving green economy, particularly as it relates to training, educating and developing the skills and abilities that will be needed by the current and future employers.

RESULTS OF REGIONAL EMPLOYER SURVEY

RESPONDENT PROFILE

This section of the report presented the results of the survey of 228 employers in the agriculture, energy, and tourism industries. The survey was conducted via telephone and web from April 18 to May 13, 2011. Thirty-four percent of surveyed firms were located in San Luis Obispo County, 25 percent in Santa Barbara County, 21 percent Monterey, and 20 percent Ventura County.

Fifty-one percent of employers indicated that their business was focused on tourism (116 employers), 33 percent identified agriculture (75 employers), and 20 percent cited the energy industry (46 employers). These counts include nine employers who identified with more than one industry.

Figure 1 County

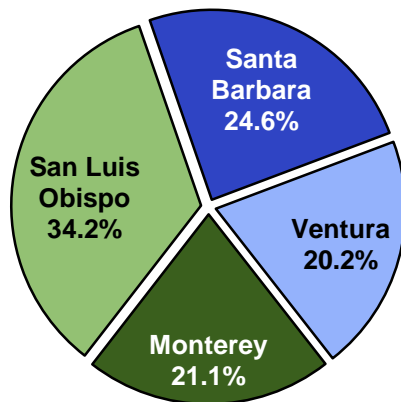
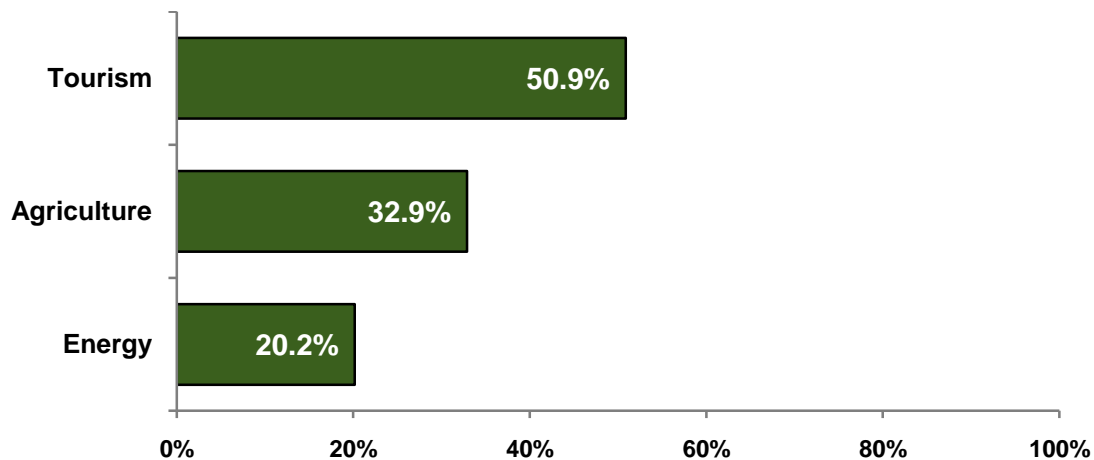


Figure 2 Industry



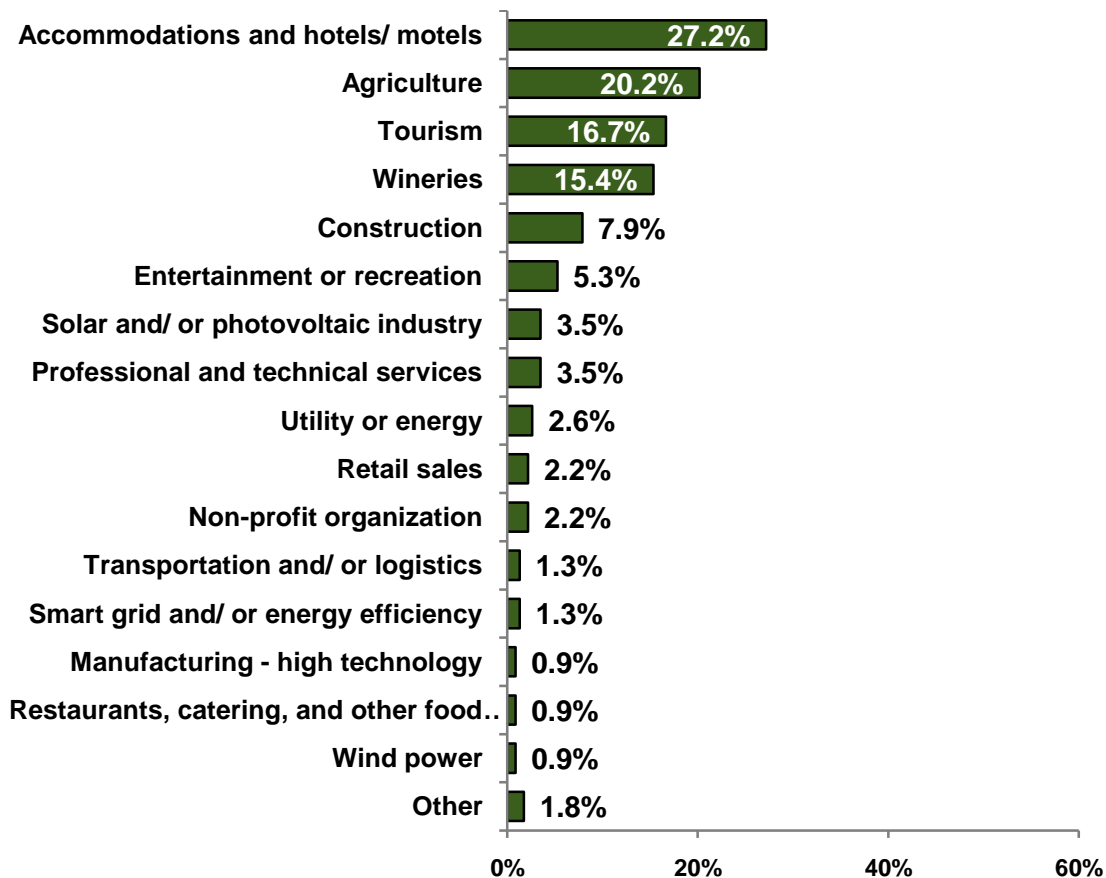
The table below shows the percentage of respondents by industry and county.

Table 1 Industry by County

	County			
	Monterey	San Luis Obispo	Santa Barbara	Ventura
Base	48	78	56	46
Agriculture	29.2%	43.6%	21.4%	32.6%
Tourism	62.5%	57.7%	48.2%	30.4%
Energy	10.4%	9.0%	30.4%	37.0%

When asked which industries their firm was most connected to, accommodations and hotels/ motels (27%), agriculture (20%), tourism (17%), and wineries (15%) were cited the most frequently.

Figure 3 Industries Most Connected to¹



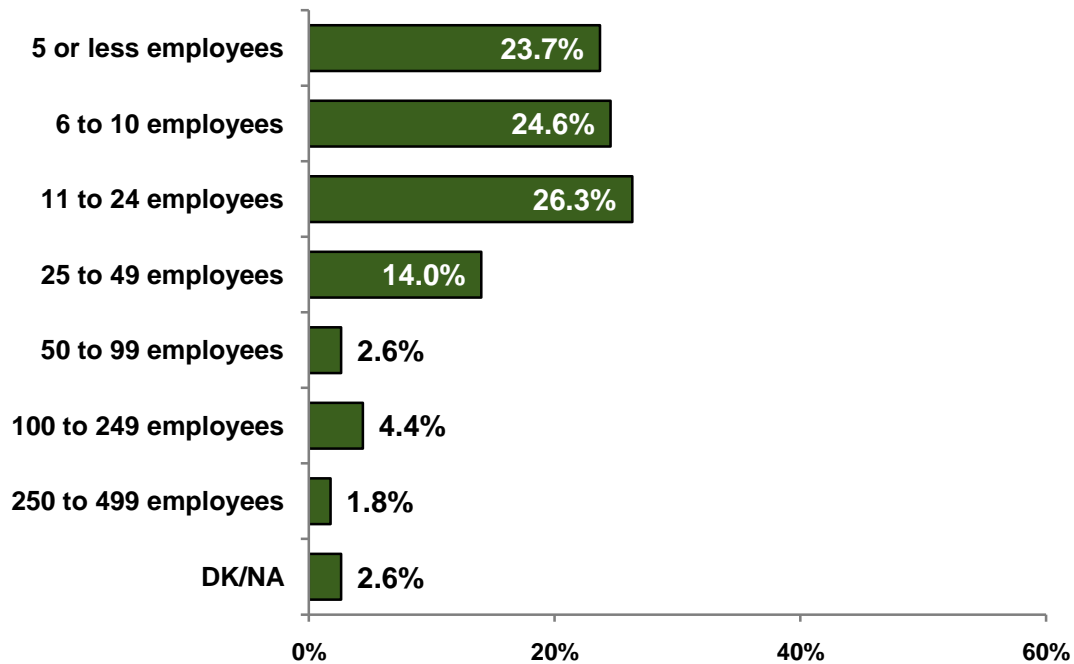
¹ For this question, respondents were free to mention multiple responses; therefore, the percentages in the figure total more than 100 percent.

Forty-eight percent of employers surveyed had ten or fewer employees (permanent and temporary) at their location.

Overall, surveyed firms employed 5,861 total workers², with an average of 26.4 per location (median of 11.0). The average was 20.13 for energy firms, 24.77 among tourism firms, and 30.83 for agriculture.

By county, the average was 17.93 for Monterey, 18.75 for San Luis Obispo, 24.72 for Santa Barbara, and 49.48 for Ventura.

Figure 4 Number of Employees



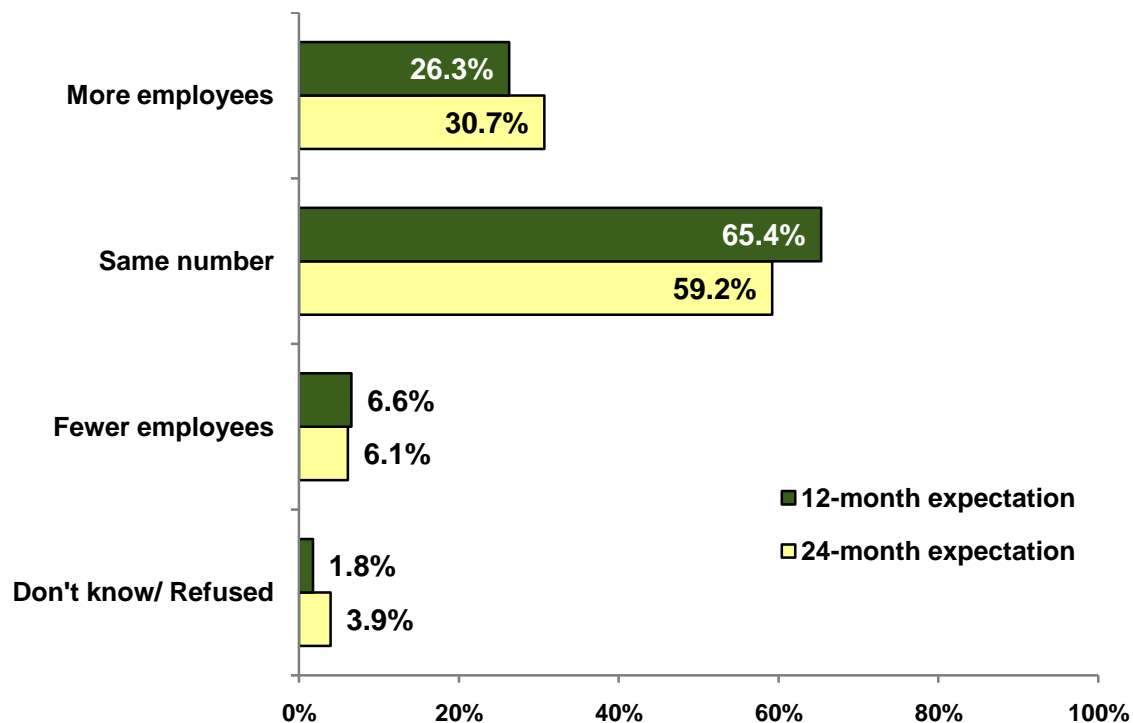
² Two hundred and twenty two of the 228 respondents provided the number of employees at their location.

GROWTH EXPECTATIONS

The majority of employers expect to have the same number of employees 12 months (65%) and 24 months (59%) from the time of the survey. Twenty six percent expect to have more employees in a year and 31 percent anticipate having more employees in two years. Less than seven percent expect fewer employees. Energy firms were the most likely to report that they would have more employees (44% reported more in one year and 57% reported more in two years).

Surveyed respondents reported a 2.5 percent 12-month growth rate and a 5.3 percent 24-month growth rate.

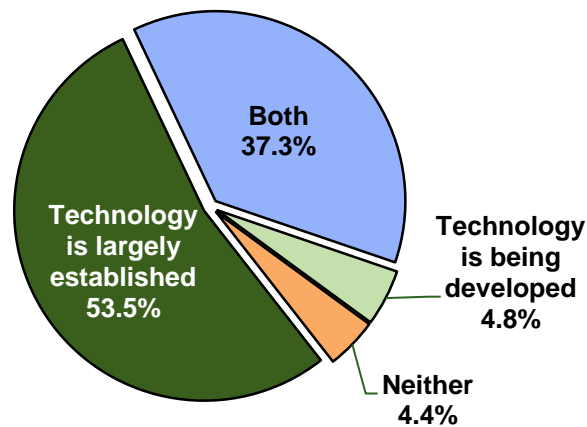
Figure 5 Growth Expectations



USE OF TECHNOLOGY

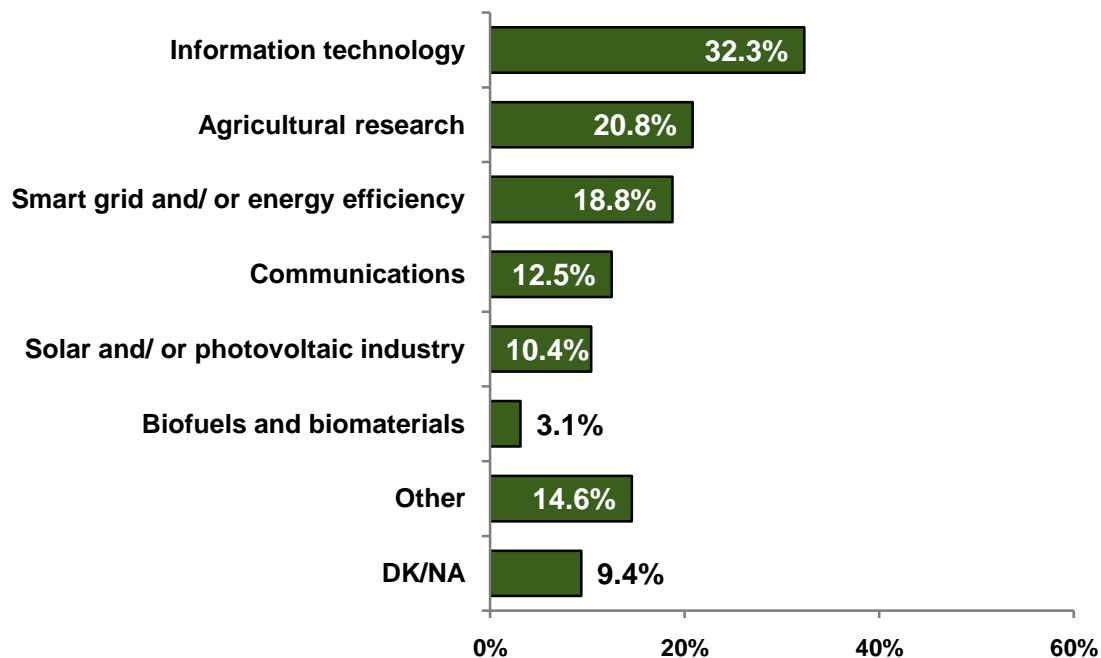
The majority of firms indicated that the technology they use is largely established, five percent indicated they are focused on developing or supporting the development of new technology, and 37 percent reported a combination of the two. As one might expect, a higher percentage of energy firms as compared with agriculture or tourism reported that technology is being developed or that they use both emerging and established technologies.

Figure 6 Technology Profile



The 96 respondents that indicated they were focused on developing or supporting the development of new technology or a combination of new and established were asked to identify the most important technologies to their firm. Information technology (32%), agricultural research (21%) and smart grid and energy efficiency (19%) were cited the most frequently among respondents.

Figure 7 Most Important Technologies among those Supporting Development of New Technology³

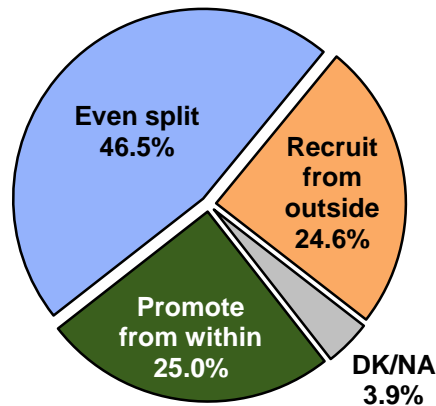


³ For this question, respondents were free to mention multiple responses; therefore, the percentages in the figure total more than 100 percent.

RECRUITMENT PRACTICES

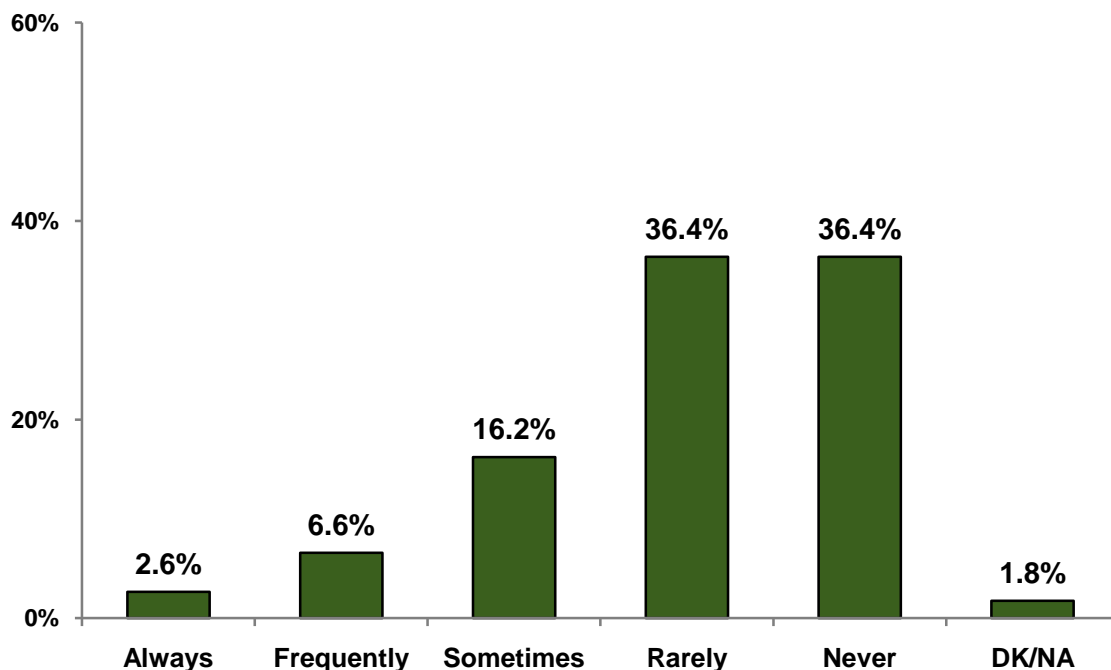
When a non entry-level position becomes available in their firm, 25 percent of employers promote from within, 25 percent hire from outside the company, and 47 percent reported an even split between the two. Comparing the three industries, energy firms were more likely to recruit from outside than agriculture or tourism firms. There no notable differences in recruitment practices by county.

Figure 8 Non-Entry Level Recruitment Practice



Seventy-three percent of firms indicated that they rarely (36%) or never (36%) recruit individuals from outside the Central Coast. Agriculture firms were the most likely to report never recruiting from outside the Central Coast.

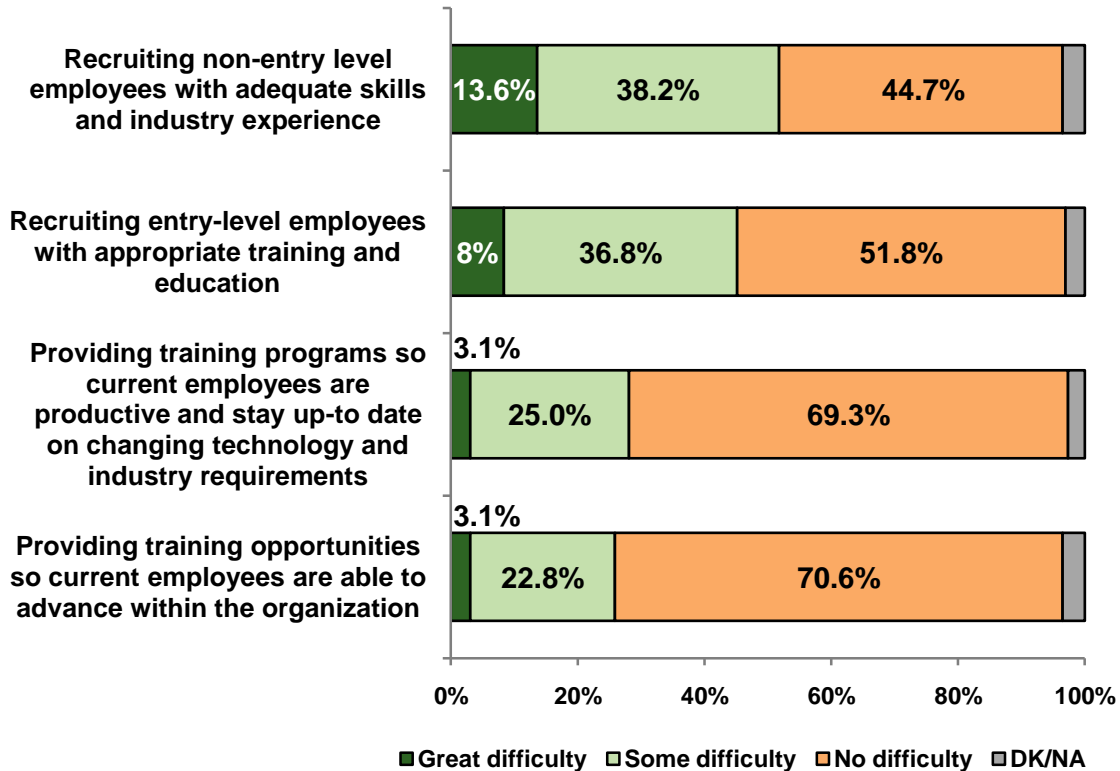
Figure 9 Frequency of Recruiting Outside the Central Coast



WORKFORCE CHALLENGES

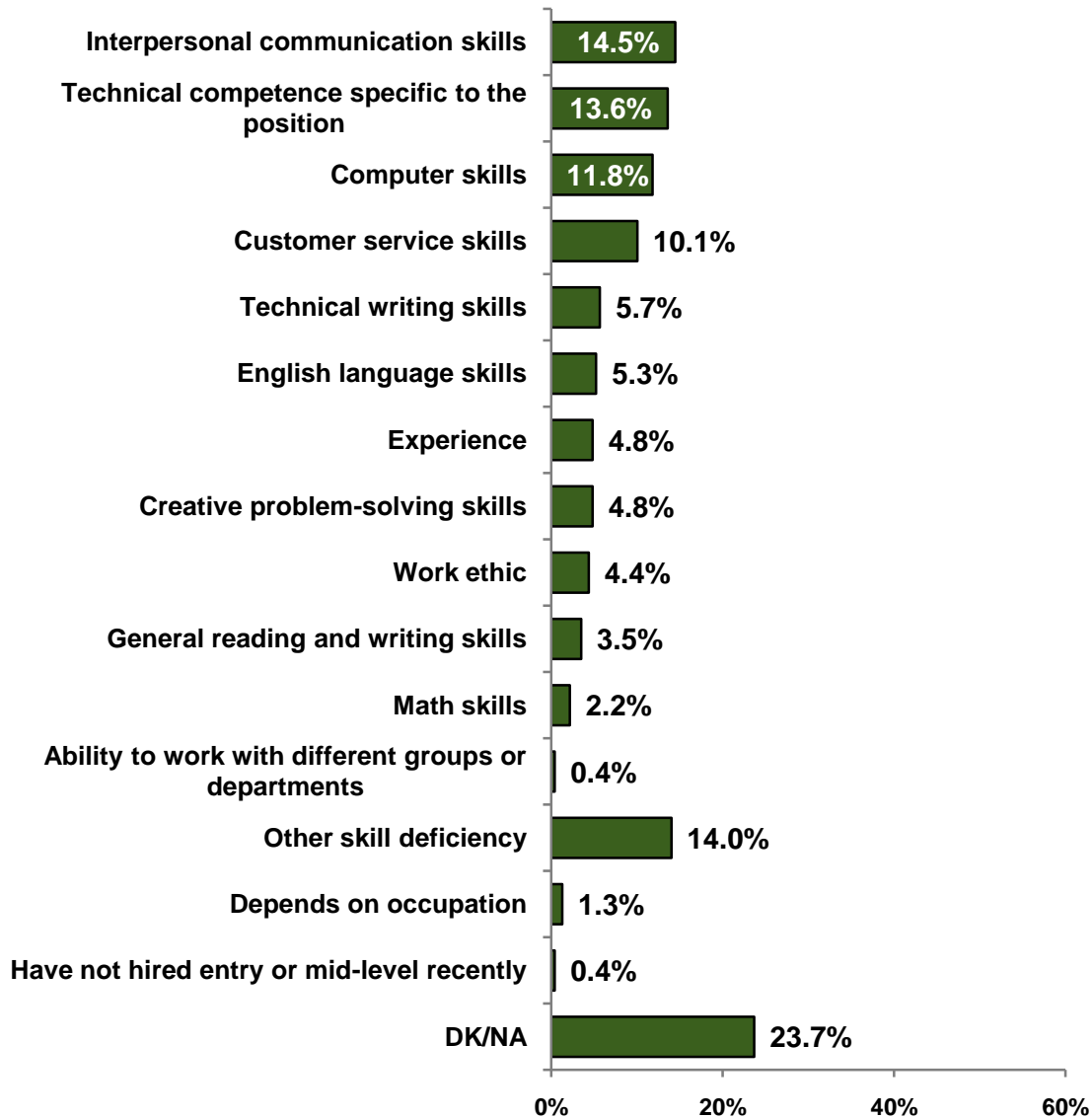
Employers reported more difficulty with recruitment than training. Specifically, 52 percent reported difficulty recruiting non-entry level employees and 45 percent reported difficulty recruiting entry-level employees. Comparatively, 28 percent indicated difficulty providing training programs related to productivity and 26 percent reported difficulty providing training opportunities for advancement.

Figure 10 Workforce Challenges



When asked to think in general about recent entry-level or mid-level hires at their organization, employers noted a variety of general skill deficiencies – with no individual skill being cited by more than 15 percent of employers. Twenty-four percent indicated that they either did not know of any skill deficiencies among recent hires or that they were not sure or declined to state.

Figure 11 General Skill Deficiencies⁴



⁴ For this question, respondents were free to mention multiple responses; therefore, the percentages in the figure total more than 100 percent.

OCCUPATIONAL ASSESSMENT

In addition to general employment trends, respondents in each of the three industries were asked about five specific occupations. The table below presents the five occupations assessed within each industry, the percentage of firms within each industry that have employees matching the general occupational description, and the number of employees in each occupation among surveyed firms.

Due to the small number of firms employing animal breeders (four firms), data for that occupation have not been included in the occupational tables or charts beyond this point. Please see Appendix C for survey responses for animal breeders. Similarly, caution should be utilized when generalizing the results for occupations in which less than 25 respondents provided data.

Table 2 Occupational Employment at Surveyed Firms⁵

Occupational Title	Percent Employing	Number Employed	Mean	Sample Size for Counts
Agriculture Industry (75 Respondents)				
Administrative and office management positions	74.7%	127	2.49	51
Agricultural equipment operators	48.0%	229	6.74	34
Supervisors and managers of field	45.3%	131	3.97	33
Customer service positions	41.3%	71	2.84	25
Animal breeders	5.3%	4	1.00	4
Energy Industry (46 Respondents)				
Finance and accounting positions	63.0%	49	1.75	28
Sales representatives or estimators	60.9%	70	2.59	27
Customer service positions	39.1%	35	2.50	14
Quality control and testing technicians	32.6%	37	2.47	15
Electrical equipment assemblers	23.9%	37	3.36	11
Tourism Industry (116 Respondents)				
Customer service positions	88.8%	675	8.04	84
Supervisors and managers of front-line workers	76.7%	302	3.60	84
Marketing and sales positions	64.7%	181	2.55	71
Finance and accounting positions	46.6%	81	1.69	48
Computer and information technology support positions	23.3%	33	1.57	21

⁵ Respondents were asked to provide occupational data for up to four occupations present at their location. The sample sizes for each occupational data point are presented in the charts and tables. Since refusals and do not know responses are not included in the tallies for employment counts and growth, the sample sizes for those question may be less than the total number of respondents asked about each occupation.

Percentages within the following sections were calculated among those respondents who employed each occupation and who were asked about each occupation (employers were asked to provide data on up to four occupations). The base sample size is provided as a point of reference within each chart (shown as n=).

Growth Expectations

More than three out of four agriculture employers expect to have the same number of employees in each of the four occupations. Employers anticipate a growth rate of three percent or less for each occupation.

Figure 12 Growth Expectations: Agriculture Occupations

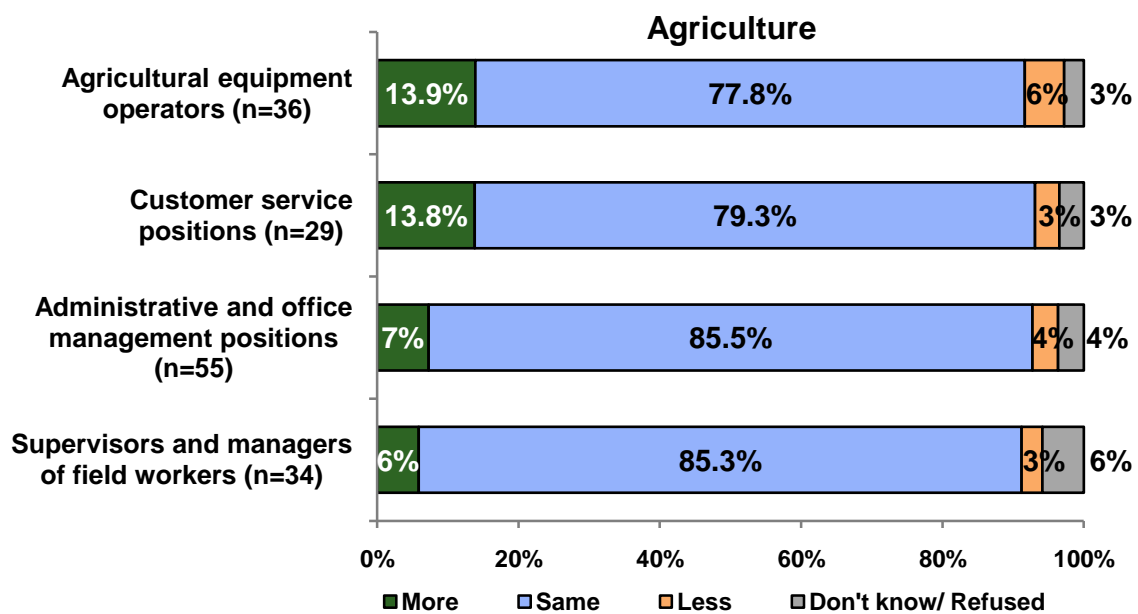
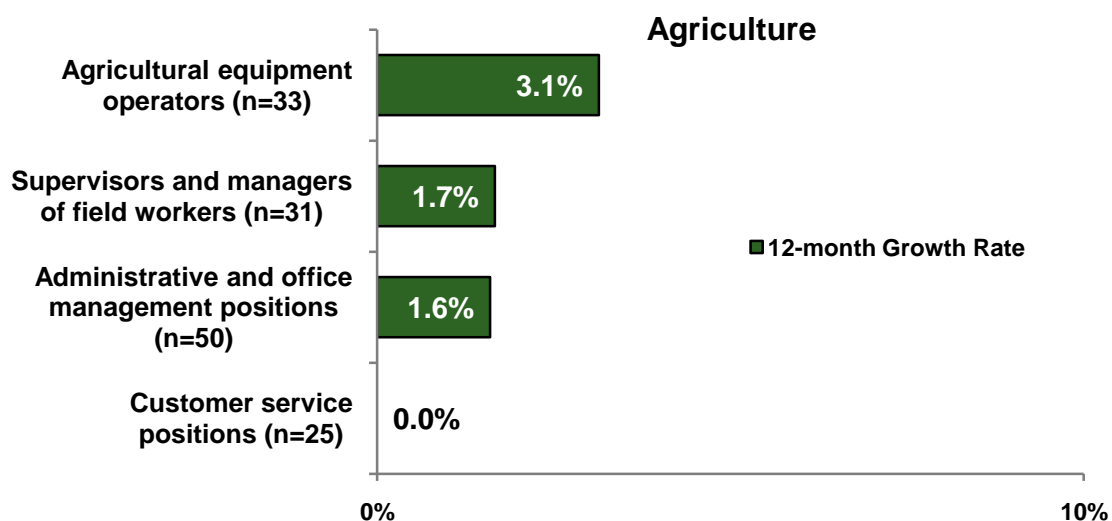


Figure 13 Twelve-Month Growth Rate: Agriculture Occupations



Energy employers anticipate double-digit growth for three of their five occupations – electrical equipment assemblers, sales representatives or estimators, and quality control and testing technicians. Eighty-two percent of the 11 employers providing data for electrical equipment assemblers (caution – small sample size) reporting that they will have more in one year, for an overall growth rate of 35.7 percent.

Figure 14 Growth Expectations: Energy Occupations

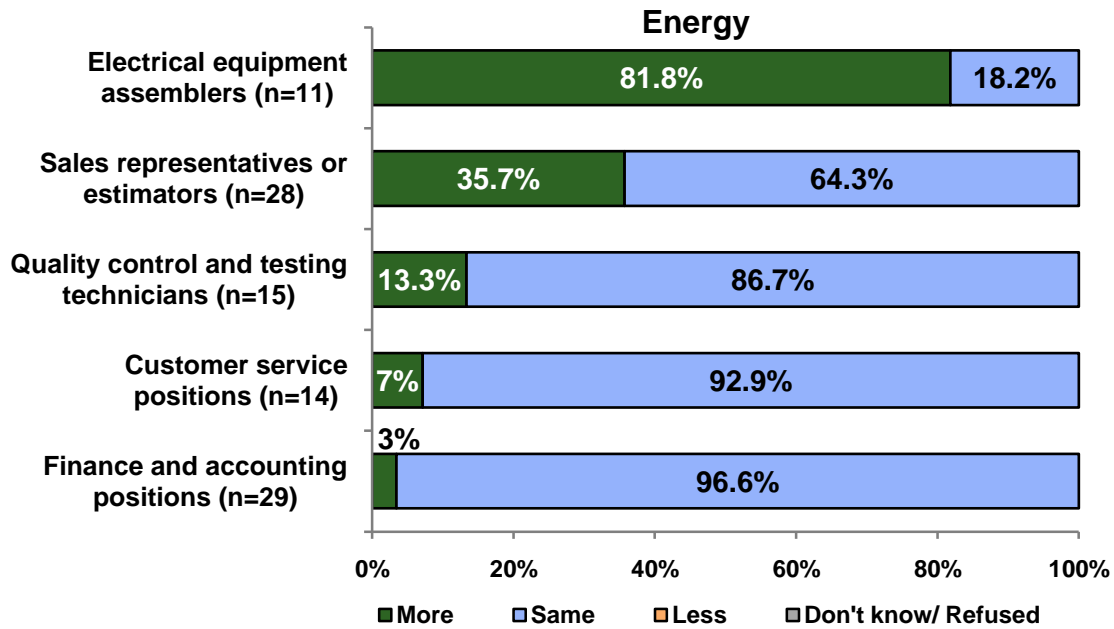
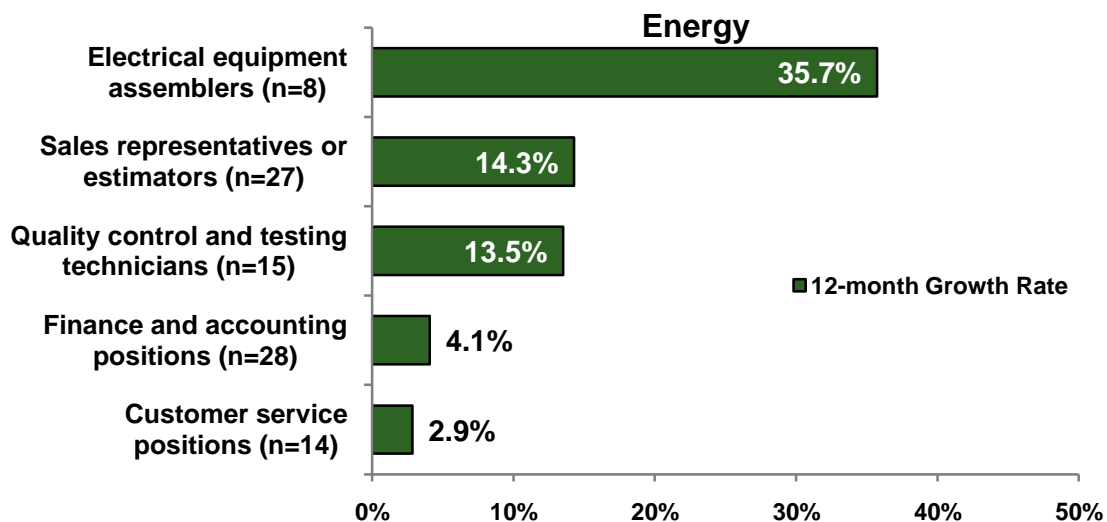


Figure 15 Twelve-Month Growth Rate: Energy Occupations



Similar to the numbers reported among agriculture firms, more than three out of four tourism employers expect to have the same number of employees in each of the five occupations. Employers anticipate a growth rate of four percent or less for each occupation.

Figure 16 Growth Expectations: Tourism Occupations

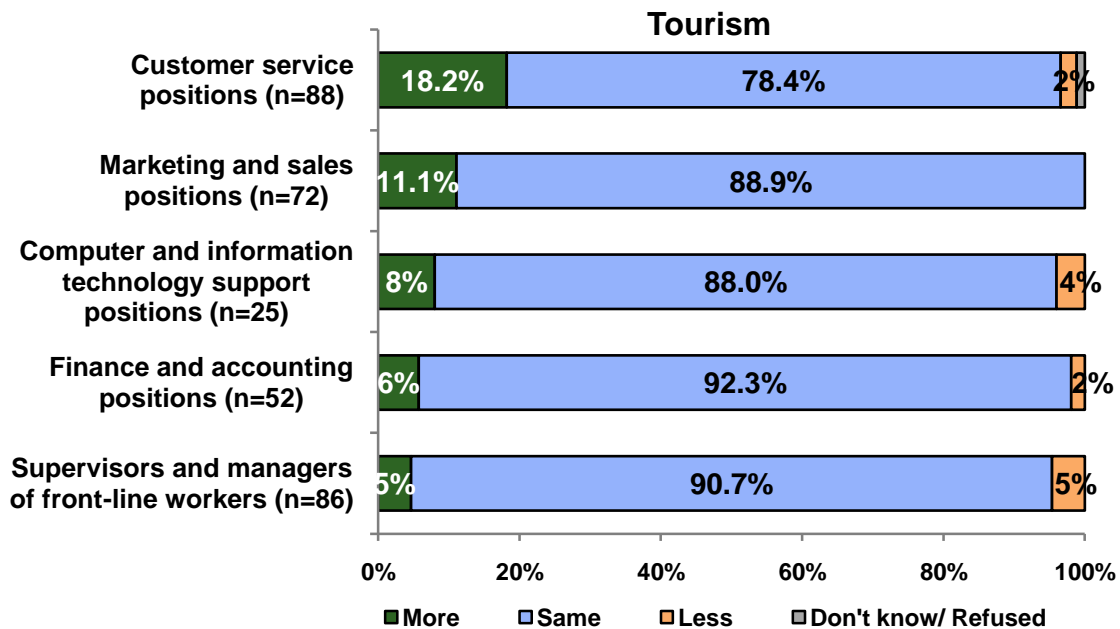
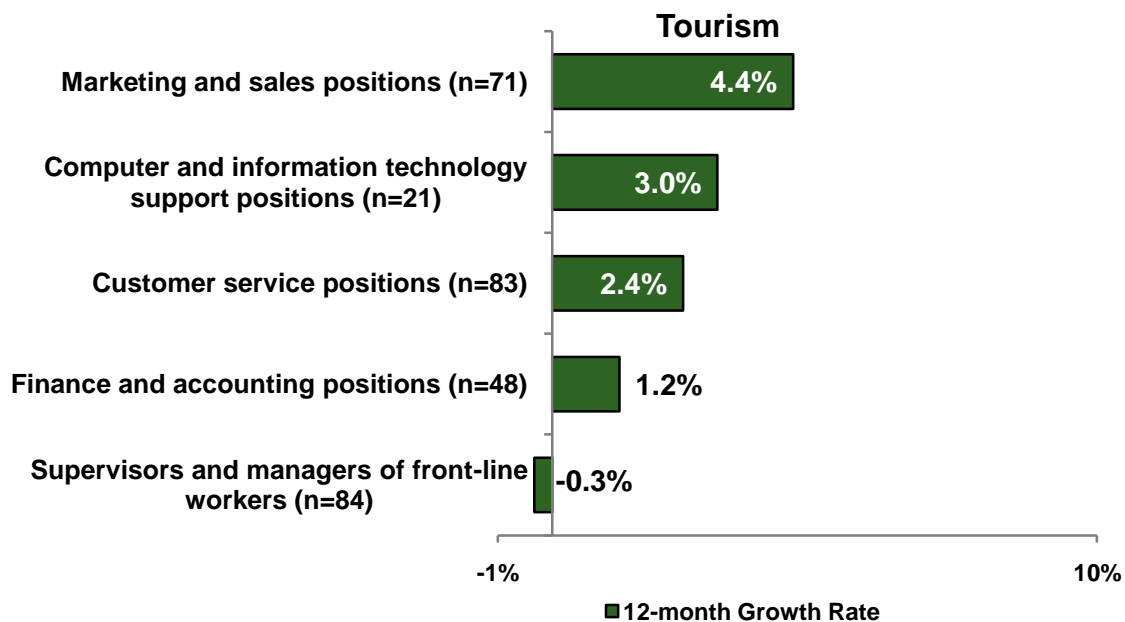


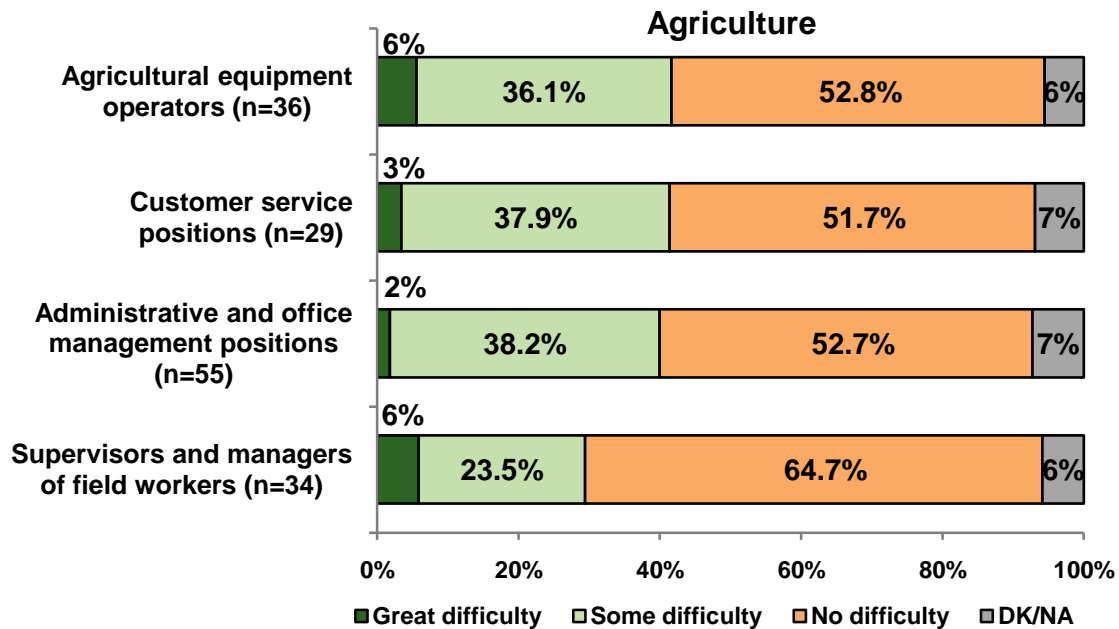
Figure 17 Twelve-Month Growth Rate: Tourism Occupations



Difficulty Hiring

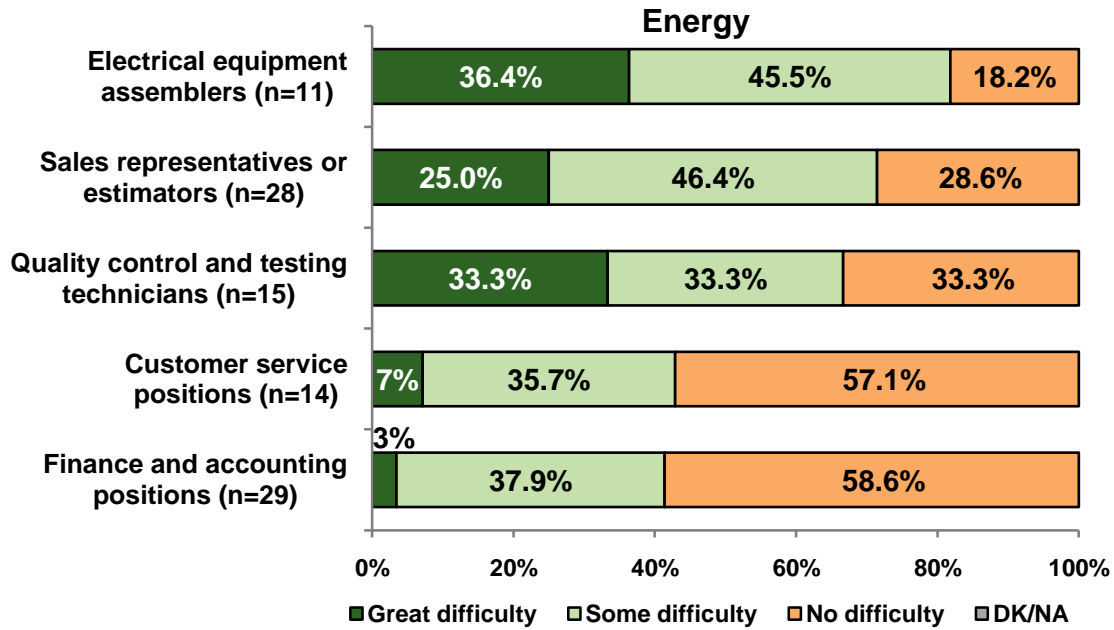
Approximately 40 percent of agriculture employers reported difficulty finding qualified applicants for agricultural equipment operators (42%), customer service positions (41%), and administrative and office management positions (40%). Twenty-nine percent reported difficulty finding qualified supervisors and managers of field workers.

Figure 18 Difficulty Hiring: Agriculture Occupations



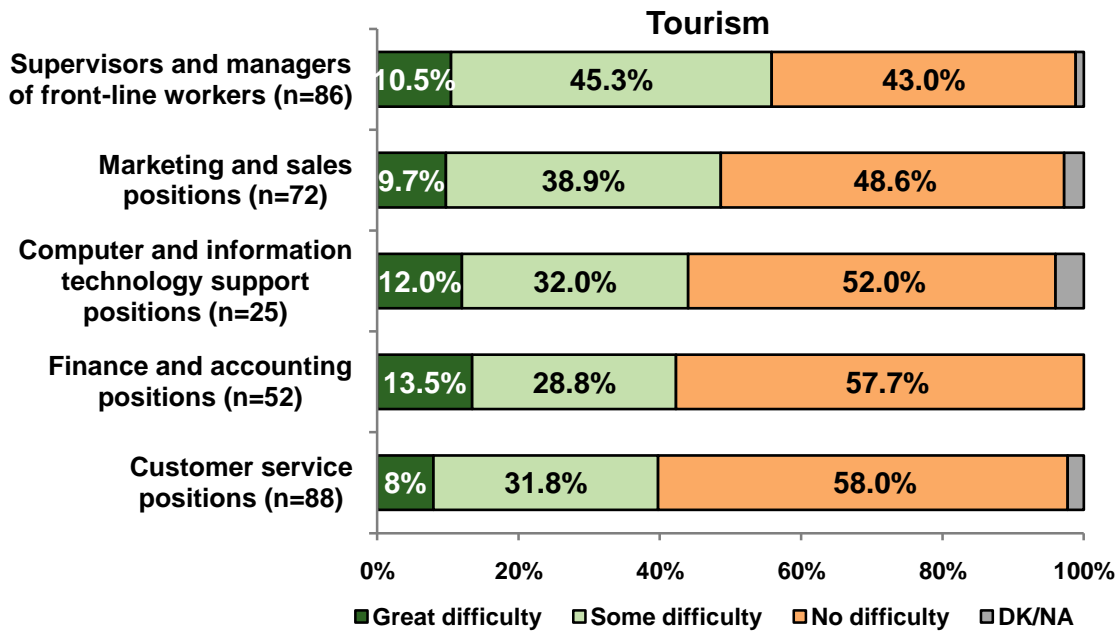
Energy employers reported high levels of difficulty finding qualified applicants for three of their five occupations. Eighty-one percent reported difficulty finding electrical equipment assemblers, 71 percent for sales representatives or estimators, and 67 percent for quality control and testing technicians. Just over 40 percent of respondents reported difficulty finding qualified applicants for customer service positions (43%) and finance and accounting positions (41%).

Figure 19 Difficulty Hiring: Energy Occupations



At least 40 percent of respondents with each tourism occupation at their location reported difficulty finding qualified applicants, with the most difficulty reported for supervisors and managers of front-line workers (56%).

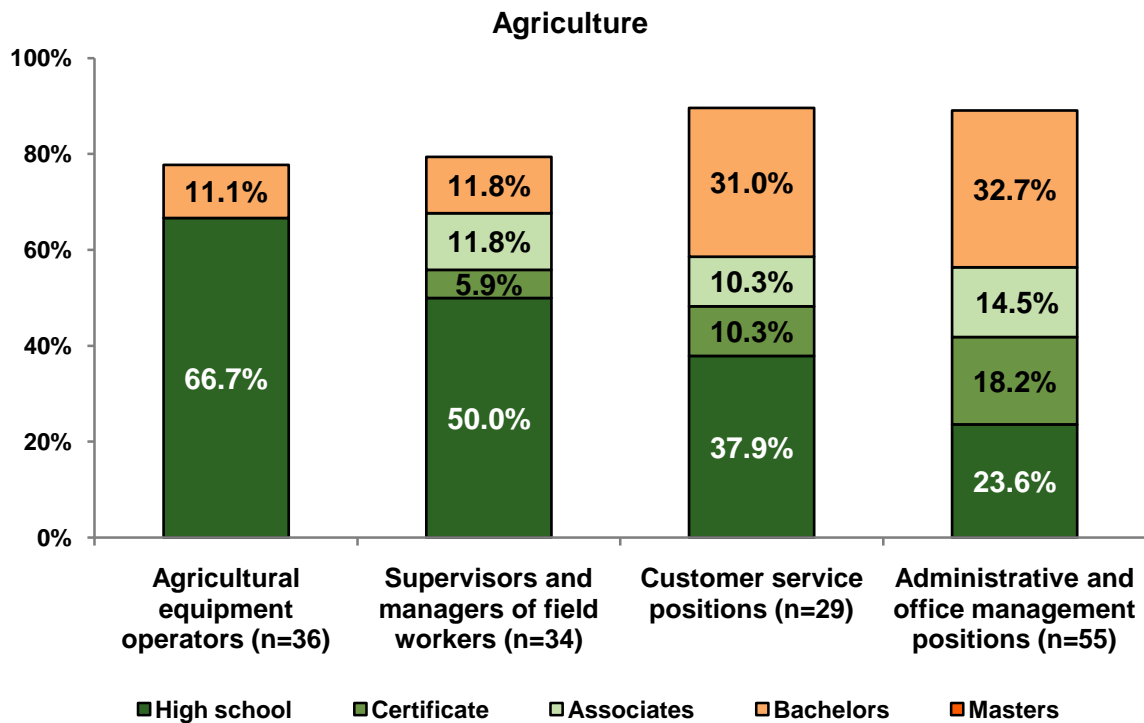
Figure 20 Difficulty Hiring: Tourism Occupations



Typical Education Requirements

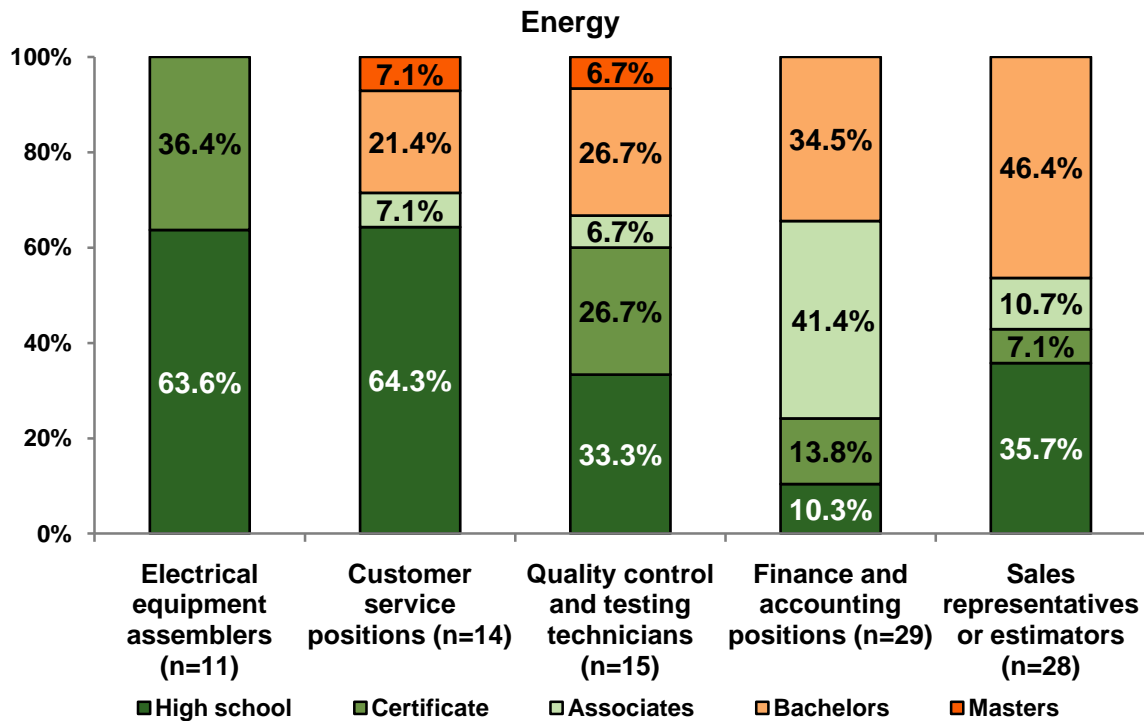
Within agriculture, the majority of respondents reported a high school diploma as the typical requirement for equipment operators (67%) and supervisors and managers of field workers (50%). Comparatively, the majority expected at least a certificate from an accredited college and close to a third reported a bachelor's degree for customer service positions and administrative and office management positions as their typical education requirements.

Figure 21 Typical Education Requirements: Agriculture Occupations



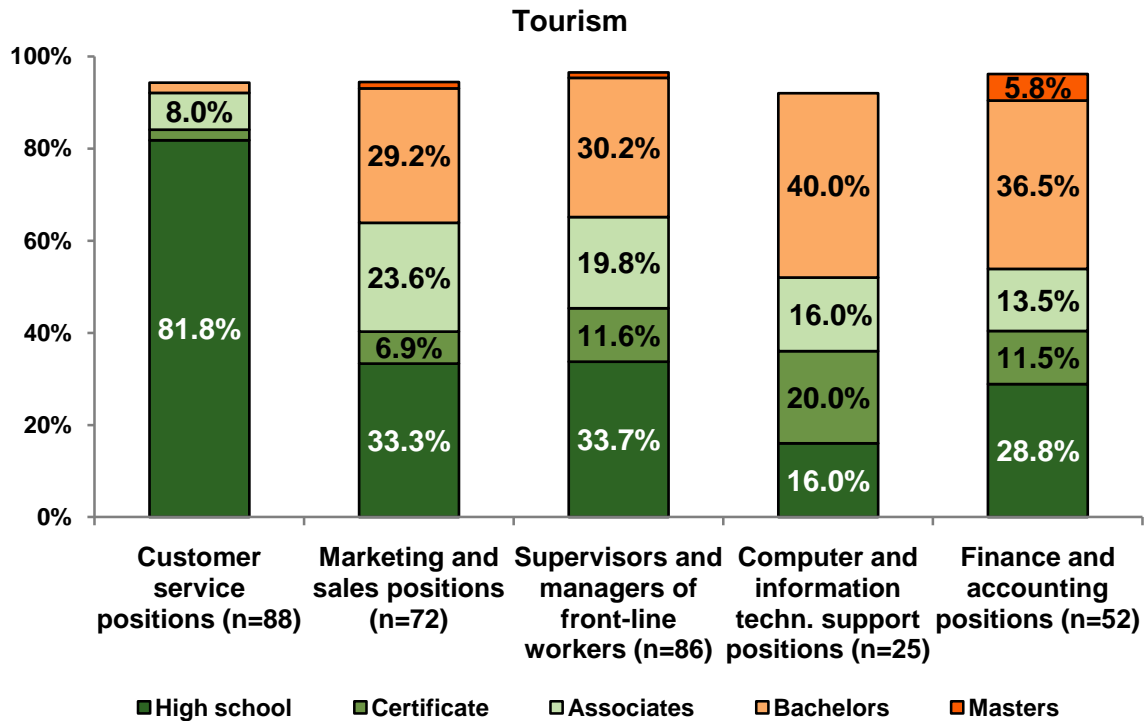
Over 60 percent of respondents in the energy industry reported a high school diploma as the typical requirement for electrical equipment assemblers (64%) and customer service positions (64%). Over a third of employers expected at least a bachelor's degree for quality control and testing technicians (33%), finance and accounting positions (35%), and sales representatives or estimators (46%).

Figure 22 Typical Education Requirements: Energy Occupations



Within tourism, eight out of ten respondents reported a high school diploma as the typical requirement for customer service positions (82%). For each of the other four occupations, the majority of respondents expected at least an associate's degree.

Figure 23 Typical Education Requirements: Tourism Occupations



Skills

For each occupation, employers were presented with five skills and were asked to select the two that were most important. For the same skills, they were then asked in which of the skills workers tend to be most deficient. The tables to follow present the findings.

Table 3 Skills: Agriculture Occupations⁶

	Percentage Rating Skill as the #1 or #2 Most Important	Percentage Rating Skill as One of the Most Deficient
<i>Agricultural equipment operators (n=36)</i>		
Skills to till soil and to plant, cultivate, and harvest	58%	14%
Willingness to work flexible work schedule	58%	8%
Ability to speak a second language	42%	47%
Skills to perform post-harvest tasks, such as husking, shelling, threshing, and ginning	11%	8%
Ability to perform tasks, such as crop baling or hay bucking	8%	14%
<i>Supervisors and managers of field workers (n=34)</i>		
People management skills	59%	35%
Knowledge of applying pesticides, herbicides, and fertilizers	47%	9%
Knowledge of growing and harvesting grains, fruits, vegetables, and other crops	32%	12%
Knowledge of planting and harvesting crops, installing irrigation, or delivering animals	29%	15%
Ability to care for live farm, ranch, or water animals	6%	12%
Ability to speak a second language	6%	3%
<i>Customer service positions (n=29)</i>		
Ability to effectively interact and communicate with customers	83%	14%
Computer literate with ability to enter, access, and retrieve data	62%	3%
Understanding of the local and regional agriculture industry	17%	17%
Ability to speak a second language	10%	34%
Ability to explain technical material over the phone	3%	17%
<i>Administrative and office management positions (n=55)</i>		
Ability to keep financial and inventory records	71%	22%
Ability to manage the day-to-day activities of one or more agricultural establishments	55%	11%
Skills to determine the best time to plant seed, apply fertilizer and chemicals, and harvest and market crops	13%	16%
Knowledge of futures market and contracts on future delivery of agricultural goods	11%	24%
Ability to plan the combination of crops to grow to stabilize returns despite unpredictable markets	4%	16%

⁶ Responses of do not know or no answer (DK/NA) are not shown in the table. For these questions, respondents were free to mention multiple responses; therefore, the percentages in the table total more than 100 percent.

Table 4 Skills: Energy Occupations⁷

	Percentage Rating Skill as the #1 or #2 Most Important	Percentage Rating Skill as One of the Most Deficient
Customer service positions (n=14)		
Ability to effectively interact and communicate with customers	79%	21%
Computer literate with ability to enter, access, and retrieve data	43%	50%
Understanding of the local and regional energy industry	36%	21%
Ability to assess the validity of, and resolve complaints	21%	7%
Ability to explain technical material over the phone	21%	7%
Electrical equipment assemblers (n=11)		
Skills to monitor gauges, dials, and other indicators making sure machinery is working properly	64%	0%
Ability to use handheld tools effectively	55%	0%
Ability to read and understand technical manuals	45%	9%
Understanding of applied principles in electronics	27%	27%
Computer literate with ability to enter, access, and retrieve data	9%	73%
Sales representatives or estimators (n=28)		
Ability to forge and maintain relationships with clients	64%	14%
Ability to communicate persuasively	43%	14%
Skills to collect and analyze data on all of the factors that can affect costs (materials, labor, location, etc.)	36%	50%
Ability to monitor customer reaction and assess the need for new products and services	25%	18%
Skills to accurately forecast the cost, size, and duration of future products and services	18%	14%
Quality control and testing technicians (n=15)		
Skills to use measuring and diagnostic devices to adjust, test, and repair equipment	60%	7%
Knowledge of electrical and electronic circuits	53%	13%
Ability to record and analyze data	47%	33%
Ability to inspect processes	20%	7%
Knowledge of the principles and theories of science, engineering, and mathematics	13%	27%
Finance and accounting positions (n=29)		
Ability to effectively use spreadsheet software	59%	14%
Ability to plan, set up, and administer accounting systems	52%	7%
Ability to prepare financial statements and reports	45%	14%
Ability to analyze and interpret budgets and data	38%	14%
Has a Certified Public Accountant (CPA) certification	0%	59%

⁷ Responses of do not know or no answer (DK/NA) are not show in the table. For these questions, respondents were free to mention multiple responses; therefore, the percentages in the table total more than 100 percent.

Table 5 Skills: Tourism Occupations⁸

	Percentage Rating Skill as the #1 or #2 Most Important	Percentage Rating Skill as One of the Most Deficient
Customer service positions (n=88)		
Ability to effectively interact and communicate with customers	91%	18%
Computer literate with ability to enter, access, and retrieve data	57%	18%
Willingness to work flexible work schedule	38%	23%
Ability to speak a second language	6%	44%
Ability to explain technical material over the phone	2%	18%
Marketing and sales positions (n=72)		
Ability to communicate persuasively	53%	24%
Ability to forge and maintain relationships with clients	51%	18%
Knowledge of local and regional activities and tourism-related resources	51%	13%
Ability to communicate effectively in writing	21%	24%
Ability to monitor customer reaction and assess the need for new products and services	14%	38%
Supervisors and managers of front-line workers (n=86)		
Ability to answer customers' inquiries and deal with complaints	57%	22%
Ability to provide day-to-day oversight of a team	57%	15%
Ability to effectively interview, hire, and train employees	52%	17%
Skills to develop merchandising techniques and coordinate sales promotions	10%	42%
Ability to ethically and accurately handle large amounts of cash	8%	6%
Computer and information technology support positions (n=25)		
Knowledge of industry software	72%	12%
Skills to troubleshoot and fix POS terminals	44%	20%
Ability to communicate technical information to non-technical personnel	24%	32%
Willingness to work flexible work schedule	20%	8%
Ability to identify inferior computing processes and technology	16%	16%
Finance and accounting positions (n=52)		
Ability to prepare financial statements and reports	46%	19%
Ability to analyze and interpret budgets and data	40%	17%
Computer literate with ability to enter, access, and retrieve data	37%	17%
Ability to effectively use spreadsheet software	33%	13%
Ability to plan, set up, and administer accounting systems	27%	31%

⁸ Responses of do not know or no answer (DK/NA) are not show in the table. For these questions, respondents were free to mention multiple responses; therefore, the percentages in the table total more than 100 percent.

FINDINGS FROM EXECUTIVE INTERVIEWS WITH STAKEHOLDERS

BACKGROUND

The State of California has instituted a regional initiative in ten regions throughout the State, based on the identification of Regional Industry Clusters of Opportunity and the establishment of regional initiatives for the economic and workforce development of these clusters. Under the auspices of the California Workforce Group, the Workforce Collaborative of the California Central Coast is sponsoring a study of several industry clusters in the region.

After examining data on the Central Coast economy, reviewing economic development efforts in each of the region's county's and listening to employers in the green initiative workshops, three broad industry clusters have been identified that represent the best opportunity for economic and workforce development in the Central Coast. These three industries include;

I. Energy and Related Green Industries

II. Agriculture & Wineries

III. Tourism

As a component of the research and planning for this regional initiative, one-on-one executive interviews were conducted. In addition to gathering information, the interviews were designed to determine what businesses would be willing to participate in a collaborative to identify critical occupations, training needs and other regional priorities for the success of the three industry clusters in the Central Coast.

METHODOLOGY

The research was conducted by phone interviews with owners and principals of the three industry clusters as well as senior managers or directors in related industry associations. A total of 24 interviews were completed, seven in energy & related green industries, ten in agriculture and wineries and another seven with tourism employers. The businesses that were interviewed were located in the four county region of Monterey, San Luis Obispo, Santa Barbara and Ventura. Therefore the businesses that were interviewed were representative of the region. A complete listing of the participants along with other employers and stakeholders that participated in the initiative can be found in Appendix A.

Businesses to be interviewed were based upon lists provided by Bill Buratto of Ventura County EDA, Mike Manchak of SLOEVC and MaryAnn Leffel of the Monterey County Business Council.

Each interviewee was emailed additional background information on the RICO Initiative and was given an idea of the questions that they would be asked prior to the interview.

The interviews were conducted using an interview guide, a copy of which is attached to Appendix E.

Detailed interview notes were written after the interviews. These notes comprised the basis of the compilation of findings contained in this report. These interview notes are also included in Appendix E.

PART 1: RESEARCH FINDINGS FOR ENERGY & RELATED GREEN INDUSTRIES

Can you tell me a little about your products and their applications?

AEE Solar - AEE and SEL are subsidiaries of Mainstream Energy, Inc. Their operation in San Luis Obispo is a \$200,000,000 business. Primarily they design and install solar energy systems. They also manufacture racks for these installations.

Agromin -Agromin partners with waste haulers who manage organic waste streams for municipalities. They compost leaves, grass and landscaping waste to create solid products for the agricultural, landscaping and retail sectors. They conduct soil analysis for agricultural and landscaping customers so that they can do custom blending to meet their customers' requirements. Their custom blending takes into account PH, minerals and nutrients. They also produce "off the shelf" retail products.

An additional product of Agromin's is energy. They convert waste streams, such as wood waste, into biogas or liquid biofuels. Using an anaerobic "digestive system," they convert this organic waste into electricity, heat or fuel.

They take organic waste and utilize a batch system, processing the waste in the equivalent of "garages." They 'percolate' it in enzymes (bacteria) for three weeks. One of the usable bi-products of the process is reusable methane gas. At the end of the process the outcome is material called "digestate." Agromin composts this material with other organic materials and kills the pathogens that might be present. The product is then screen for particulate size and blended with other materials to produce Agromin's products.

iCel LA North - iCel's products are storage cells for electricity. These are used both by homeowners and industrial applications. The store electricity generated by solar cells, wind turbines and directly off the grid. They license the technology and assemble the storage devices. Their flagship product is "Punchhouse." It employs 12 cells to store 12 kilowatts of electricity. Ms. Melcher explained that "most people don't know that if the grid goes down, solar does to, if the user is attached to the grid. That does not happen with our storage cells. They are a start-up company with their emphasis currently on sales and marketing.

They are fabricators, welding components together as a part of the manufacturing process.

Solar World - They are the largest solar manufacturer in North America and the third largest in the world. California houses 40 % of their manufacturing capability and all of their sales and marketing team. Facilities in Oregon comprise 60% of their manufacturing capacity.

Their end product serves three markets

Residential rooftop – which is 10% of their overall market

Commercial/Industrial – which comprises 80% of their over-all market

Utilities- 10% of their served market

They collaborate with partners to whom they supply the solar panels.

They utilize contractors to install their systems on residential homes.

For larger installations they also have their own construction and installation division.

Systems design is a component of their business. Manufacturing is largely a fabrication and assembly process.

Ojai Energy Systems - Ojai produces portable power storage systems for major entertainers and events. These systems are storage batteries that usually are recharged after use, but can be powered by solar cells. These portable systems also have military applications.

They also market the OES2 line that includes 12, 24 and 48 volt systems, which they are selling to the residential market. They provide a ten year warranty.

These products charge 2.5 times as fast as lead battery systems. Their capacity when fully charged permits 3,000 cycles before they begin to lose power.

The batteries are 1/3 of the weight of lead acid batteries. Lead acid and Duracell batteries need to be carefully recycled, because they emit toxic gases. Those emissions do not apply to Ojai batteries. They design the arrays for use of these storage systems, and these systems are 99% efficient.

Ojai is currently a laboratory and development company without a manufacturing facility.

Monterey Peninsula Waste Management District- They are a governmental agency serving a district in Monterey County. They have existed for 60 years and they are totally self-supporting based on fees that they charge for services. They salvage waste for reuse, including recapturing energy from waste through decomposition which produces methane and carbon dioxide. The energy produced from methane is used to supply their own needs and the remainder is sold.

Cool Planet Bio Fuels- Cool Planet manufactures micro refineries that produce high grade gasoline from non-food, low grade biomass. The refineries are mobile. The largest are tractor trailer size and are capable of producing 1,000,000 gallons of fuel per year. Because of the use of low grade biomass like wood chips or corn cobs, the process is very economical and produces gasoline at significantly less than today's cost.

A byproduct of the process is bio-char (activated Carbon) which is returned to the soil and enhances its properties, such as water retention.

Because of their use of the byproduct of the process, they are a negative carbon gasoline.

They provide training in its use and sell a maintenance contract with it. Their financing is mostly lease/purchase.

Their shareholders include Google, GE, NRG, Conoco and investment groups. They are the only bio-fuel company financed on this scale.

In your view what are the current key factors to the success of your business (or industry)?

AEE Solar - Their personnel are their greatest asset, a talented and dedicated team. Incentives for installing solar energy are still a major driver of the industry. They also need the support of utilities, because their systems need to be integrated with conventional utilities.

Agromin - Finding good people with the experience that Agromin needs.

iCel LA North - Executable marketing plan

Vision for the storage concept – “passion.”

The “right” people

Advocacy for legislation at the Federal level. “California has energy laws that are very favorable to us.”

Solar World –

Their primary issue is manufacturing cost reduction to compete against Chinese companies. Their competitors receive no interest loans, without any clear obligation to repay the principal.

They have the same challenge faced by most companies of “bringing the product to market.”

There are also political issues. The Oil and Gas industry receives very substantial incentives. A very small percentage of these would provide the solar industry with incentives to grow and develop future technologies.

Mr. Kilkelly claims, “The necessary technology is here today.”

Ojai –

The current capital markets are not favorable

Brett Sechrest explained, “We need to target specific markets on the portable side.”

Monterey Peninsula Waste Management District - They are realistically a resource management company, which has the capability of green energy production.

Their success is based on a pragmatic approach – fiscally conservative and building for the future in small incremental steps.

Cool Planet Bio Fuels- Putting out sufficient numbers of refineries to have an impact on the U.S. dependence on foreign fossil fuels. Because of their investors, they have no marketing or capitalization issues, which is unusual for a twenty month old company.

What occupations are critical for successfully addressing these factors?

From your knowledge of your business for which (if any) of these occupations is it difficult to recruit qualified personnel?

Are there current training or educational needs that are not being addressed, which would make it easier to recruit qualified and skilled employees for these positions if this training or educational programs were available?

AEE Solar –

Sales

Finance

Marketing

Human Resources

Engineering

Career Opportunities include a trained workforce with not only electrical training, but a background in solar energy. Community Colleges are a source for trained personnel.

They do not have difficulty recruiting. They can recruit experienced construction personnel, because of the slump in the construction industry.

There is an organization called Solar Tech that does much of this training. They are a lobbying group also. They are managed by Doug Paine. The web site is www.solartech.org.

The company has more difficulty recruiting at the senior management level. The local economy does not provide many opportunities for working spouses.

Agromin - Agromin requires:

Employees with four and five year business degrees

Biology and Chemistry majors with four year degrees

Agriculture and Horticulture majors with two to four year degrees

They need higher level personnel capable of researching the requirements of what their customers are trying to grow and matching these to the analysis of soil samples.

Among Blue Collar Workers Agromin has needs for:

Truck Drivers

Laborers involved in materials handling, packing and shipping

Operations personnel

Heavy Equipment Operators

Bill Camarillo elucidated, “We have plenty of applicants, but not a sufficient number of qualified ones. Most of our applicants simply do not have the work experience that we require, even to maintain our insurance.”

Bill Camarillo explained, “We need more technical training. There is a need for more practical training for truck drivers and heavy machinery operators. We have to pay more for experienced people, but it’s less expensive in the long run. For these and other occupations we need the equivalent of the Unions’ apprenticeship programs. We simply don’t have the time or money to train.”

iCel LA North –

Labor – manual dexterity

Welding – experience and precision

IT – Database management both for customer service and the supply chain

Electrical Engineers

Sales and Marketing – Trained to understand the product from a technical standpoint with knowledge of Solar and Wind generated energy.

They have had little difficulty recruiting at all levels.

Solar World -The sales force requires training in renewable energy sources and related technologies. Otherwise there are already well trained people in the workforce.

Sales and Marketing

Engineers – Civil, Mechanical, Electrical

Customer Service – technically knowledgeable

Systems Process (manufacturing) engineers and management

Heavy Machinery Operators

Materials Handlers

They have had no difficulty recruiting, but as they expand they are going to need more people in the same occupations in the future.

Training and educational gaps involve getting the trades up to speed including architects and installers. One training organization is the NABCEP.

Ojai Energy Systems -Marketing and sales are critical, but basically they subcontract for collaborative design and small scale manufacturing.

Their product development is also collaborative.

Monterey Peninsula Waste Management District

They employ about 120 people, down from a maximum of 150. 50% of those people are laborers. And another 25% are heavy equipment operators.

Management levels require human resource professionals including internal training for safety, managers who are aware of and can comply with regulations, and financial management.

They have no difficulty in recruiting workers and have very high retention. They also have a very high attendance rate, which William Merry attributes to the belief in their mission. “This spirit is huge.”

Training is mostly internal and supplemented by external seminars, but they would like to work more closely with community colleges, particularly with regard to environmental issues.

Cool Planet Bio Fuels - Chemical Engineers

Fuel Scientists

Mechanical Engineers

Process Engineers-Automation experts

Machining and Welding

Project Managers

The only difficulties they have recruiting is that they are looking for the cream of the crop and there is a shortage of engineers of this caliber.

Apart from qualified personnel are there other current obstacles to the success of your business?

AEE Solar - The uncertainty of government subsidies is an obstacle. They depend on these for the economic justification for the use of solar power.

Agromin -The major obstacles are regulation and compliance issues. They usually make no sense, but they burden larger successful companies with regulations that smaller companies are not subject to or they ignore. The result is competitive inequities.”

The other obstacle is permitting delays. It can cost a company \$500,000 and two years to receive permits for a new facility, even before ground breaking can occur.

Camarillo asserts, “Fees and taxes in the state, put all of its companies at a tremendous competitive disadvantage, even over companies in other states, let alone in a globally competitive environment.”

iCel LA North -The technical obstacle is the conversion of electricity from AC to DC.

As a start-up company they need to install enough units to attract capital. These installations have to be sold by a technically knowledgeable sales force.

Also, currently they are doing design work on every system, which is unprofitable. They need to standardize the process and find ways to mass produce their product.

Solar World -The industry needs to have incentives to offset development costs. The political world must be aware of their support as being self-funding, with a significant return on investment.

They need to educate financial institutions as to how their installations add value which converts to equity.

Ojai Energy Systems - Capital and cashflow are the primary obstacles to his company achieving its future goals. They have so much third party involvement, from development, manufacturing to installation that cashflow becomes a major issue. Also they need to find the right applications for their technology with sufficient volume. Also, the marketplace needs to be educated about the possibilities.

Monterey Peninsula Waste Management District

Economic issues are paramount. They divert 60% of the waste they recover, but they lose money on this process, which is paid for by fees for the 40% that they still put into a landfill.

Cool Planet Bio Fuels - Managing growth is their biggest concern, not to grow so fast that it is not controlled.

Government Regulations

What are the products or technologies that offer the greatest opportunities for your business over the next five years

AEE Solar -The markets for solar energy are expected to double in this year, and that growth should continue. Technological advances to increase the efficiencies of this energy source are necessary to make it sustainable without subsidies.

There are considerable economic development opportunities for the recruitment of supply chain companies to support the solar energy industry.

Agromin - For Agromin there are opportunities for expansion geographically and further penetration of the retail and agricultural markets. They also have opportunities in the energy sector by building a biogenic energy facility, which can produce biofuel and biogas from waste. The facility will produce energy, which can provide energy for Agromin's production processes and excess energy can be sold. Another byproduct will be compost materials.

iCel LA North - Ms. Melcher expressed, "The greatest opportunity are the rapidly expanding applications for the storage of electricity." They will make their product compatible with wave generated electricity as well.

Solar Energy - Solar perceives significant opportunities to expand in both their Residential and Utility markets, particularly the latter.

Ojai Energy Systems - Ojai believes that their future opportunities involve putting renewable energy onto the “grid” utilizing their storage systems

Monterey Peninsula Waste Management District

Until 20 years ago their role was basically to “bury garbage.” Now they have a 100,000 square foot building designed for recycling. Currently they divert 60% of the waste that they collect. Future mandates will require 75%-80%.

Much of this diversion will involve conversion to energy. This conversion will require installing an anaerobic digester. This process will accelerate the decomposition process of organic waste. Waste Management will be able to extract all of the gases available to generate energy in one year, a process that naturally takes 30 years.

Cool Planet Bio Fuels

They are capable of producing low cost jet fuel and Diesel Fuel.

To support growth in each of these areas, what occupations will be critical?

AEE Solar - The required occupations will essentially be the same, with a heavy emphasis on management level personnel, marketing, engineering and construction workers.

Agromin -Personnel capable of energy production monitoring and monitoring of gas production.

They will need trained personnel from the engineering levels to operational technicians.

In some cases the manufacturers of the equipment would train the technicians.

iCel LA North –

More Design and Electrical Engineers

Process Managers for automated manufacturing

Solar World – They will need more of the same occupations that they do now

Ojai Energy Systems – Skills to realize their future opportunities are not needed by them, because they do not manufacture their product and development and installation are the result of collaboration with other companies.

Monterey Peninsula Waste Management District

They will need to do more with fewer people. They will still need heavy equipment operators, electricians, mechanics.

“These people are not being trained for tomorrow. There needs to be cross-training and they all need a background in green industry.”

Cool Planet Bio Fuels

They will require:

Carbon Life-Cycle Experts

An expert in dealing with governmental regulations.

Experts in dealing with large oil companies.

Environmentalists

They are applying American innovation, which Mr. Rocke believes can be restored to past levels

Apart from qualified personnel are there, in your opinion, other obstacles to the development of these growth opportunities?

AEE Solar - The technology will have to keep pace with the potential demand in terms of the solar energy source being economically competitive with alternatives.

Agromin - The obstacles are the same as current operations, regulation and permitting red tape, that impede technical innovation.

California industries are “hamstrung. The investment sector, both external and internal, is reluctant to invest in California industries, because of these obstacles.

Bill Camarillo explained, “You can get a ‘no” from permitting agencies after expending two year and a half a million dollars. If that happens two or three times, industries will go elsewhere

iCel LA North -Lack of capital to invest in automated manufacturing and internal product design

Solar World -The same as the obstacles to current success

Ojai Energy Systems -These will not change from the above noted obstacles.

Monterey Peninsula Waste Management District

These obstacles are economic. Some communities have mandated zero waste by certain dates. There would be no revenue stream from landfill waste to subsidize recycling. This subsidy would have to be provided by increased fees for garbage collection and also incentives for separation of various types of waste.

Cool Planet Bio Fuels

Government regulations

The collaborative project for which this research is being completed has a significant emphasis on “green” initiatives. These would include industries that utilize alternative or renewable sources of energy, industries providing alternative or renewable energy, manufacturers of products that promote conservation of

resources, energy efficiency, or the means of using renewable sources of energy or businesses that have implemented green processes or procedures.

Are you currently using green technologies or procedures?

Are there any occupations that are required specifically to utilize these technologies or implement these procedures?

AEE Solar – Matthew Woods explained, “We outsource all of our manufacturing to global leaders such as SAPA. We of course try and limit transportation, increase domestic content and eliminate waste with our design. “

Agromin - Bill Camarillo asserted, “We are trying to balance the equilibrium between ecology and economy.” Currently, they utilize diesel and electric energy. If allowed to implement their new renewable energy generation technology, they will produce their own energy and sell the over supply.

iCel LA North -iCel currently utilizes its own storage technology.

When they build a new manufacturing facility, it will utilize renewable energy sources.

Ojai Energy Systems -They currently use only their energy storage systems. When they build their own manufacturing facility, they will use solar energy integrated with their storage systems.

Monterey Peninsula Waste Management District

Waste Management generates 5 megawatts of electricity a day. They utilize 10% of this on site to run their plant, their wood grinder and the energy needs of their office space. The rest they sell.

Cool Planet Bio Fuels

They control emissions from their plant, and they recycle everything that they can, including gases and water.

Do you know of other businesses in your industry that are significantly implementing green technologies or procedures?

AEE Solar -Costco Wholesale, large PV system on their roof, very aggressive energy efficiency policies and procedures.

iCel LA North -Check the membership of the Green Valley Task Force (in Los Angeles). www.valleygbtf.org

Monterey Peninsula Waste Management District

William Merry believes that the leaders in this area are the construction industries that are doing green building, not only for new construction, but for remodeling and maintenance.

Cool Planet Bio Fuels

Mr. Roche mentioned Ceres, a company that produces crops for energy production. “They recycle everything.”

In order to get beyond the research stage into the planning and implementation stages, the Green Manufacturing Industry and Alternative Energy Cluster will have to establish a regional organizational mechanism, where every important stakeholder group is represented. Whatever the model, would you be willing to serve as a part of it? Who else, in your opinion should be a part of the group implementing this initiative?

AEE Solar –Matthew Woods declared, “Yes but it will need to be defined at what level of participation. We have a Director of Legislative affairs that may drive these efforts. Thank you for including us.”

Agromin -Bill Camarillo is very interested in participating in the implementation stage of this initiative, but only if the objectives are outlined clearly and there are clear benefits offered. They would be very appreciative of help with their own growth models. But the initiative has to be “economically driven, not just eco-driven.”

iCel LA North -Ms. Melcher confirms, “We definitely would like to have someone participate. Connecting people inspires people.”

Solar World -Kilkenny would like representatives of the Central Coast RICO project to visit the plant and discuss this initiative and its possibilities face to face.

Ojai Energy Systems -Sechrest stated, “I’d love to be part of it. We have a very complex supply chain, and we would definitely benefit from such a collaborative. The other participants might benefit from a collaborative relationship with us.”

Monterey Peninsula Waste Management District

William Merry would be interested in seeing how this initiative develops. They currently are involved in public/private partnerships, and he can believe that a regional collaborative could accelerate the benefits of these public/private partnerships.

Cool Planet Bio Fuels

Mr. Rocke would like to participate on the Steering Committee. He envisions tremendous opportunities with states moving to carbon trading.

He mentioned also that their Founder and CEO, Mike Cheyki, has won the World Economic Forum awards for green industries twice. He is a real expert and might be a huge contributor.

CONCLUSIONS

Key Factors for Current Success

Several respondents indicated that the primary factor was obtaining effective personnel, the “right people.” Others cited marketing as a critical factor for their success. Cost-effectiveness to enable them to be competitive was pointed out by Solar World. Shortage of capital and conservative fiscal management were other factors. Political support for incentives was a major area of concern to the renewable energy companies. Cool Planet Bio Fuels needed to get more mini refineries out into the field.

Key Occupations

These occupations covered a wide spectrum including:

Sales

Finance

Marketing

Human Resources

Engineering-Civil, Mechanical, Electrical

Chemical Engineers

Fuel scientists

Electrical Training with a background in solar energy

Employees with four or five year business degrees

Biology and chemistry majors with four year degrees

Agriculture and Horticultural Majors, with both 2 and 4 year degrees

Truck Drivers

Heavy Equipment Operators

Operations supervisory personnel and systems process engineers – automation experts.

Heavy equipment operators

Machining and Welding

IT-Database Management

Project Managers

Most of these companies do not have difficulty recruiting, but Solar World complained that most do not have the practical work experience. Cool Planet BioFuels felt that there was a shortage of engineers as a consequence of the decline in manufacturing.

Companies outsourced their training, utilized seminars or trained internally. One indicated a need for apprenticeship programs like those offered by unions.

Obstacles to Current Success

Regulation and compliance issues were major obstacles. The uncertainty of Government subsidies was a potential obstacle. The need for more efficient manufacturing techniques was also cited, as was attracting capital. These renewable energy companies and recyclers are currently not economically sustainable without subsidies or incentives.

Greatest Opportunities for Growth

Markets for solar energy are growing at a very fast pace, but technological advances will be required to increase efficiencies and make solar power sustainable without subsidies. Economic growth by attracting supply chain companies was identified as a major opportunity.

Expansion of markets geographically was an important opportunity.

Generating high quality bio fuels from waste is also a substantial opportunity for growth.

Applications for the storage of electricity from renewable energy sources will expand.

Selling renewable energy to utilities is another significant opportunity.

Occupations Required for Future Growth

In addition to the skills required currently, future occupations mentioned were:

Technical expertise for monitoring energy production from renewable energy sources.

Design Engineers

Carbon life-cycle experts

Experts in dealing with governmental agencies

Environmentalists

“People are not being trained for tomorrow. They all need a background in green industry.

Obstacles to Growth Opportunities

Technology will have to keep pace with the demand for renewable energy and to enable it to be economically competitive.

Regulation and “red tape” will be a major inhibitor of growth.

Lack of capital to invest in automated manufacturing and internal product design was mentioned.

Primarily, respondents felt that current obstacles would also apply in the future.

Green Technologies

Most of the companies interviewed utilized their own products for energy generation or storage. Two companies plan to utilize bio fuels from their own waste. Many do not have manufacturing facilities. Those that do manufacture control emissions and recycle water, gases and heat.

Participation on a Steering Committee and Task Forces for a Collaborative Regional Initiative

All companies interviewed expressed interest in participating on a regional collaborative Green Industry Cluster Steering Committee or Action Groups designed to solve problems associated with the obstacles that they identified. All of the representatives of these companies have been highly successful and very knowledgeable of green technologies and their applications.

RECOMMENDATIONS - FOR ENERGY & RELATED GREEN INDUSTRIES

The development of a regional initiative for the Green Industry cluster should begin with the recruitment and formation of a Steering Committee. The Committee should consist of representatives from leading Green Industries, Green Builders and economic development professionals. Representation from other sectors should comprise the action task forces instead of the Steering Committee, to prevent the Steering Committee from becoming cumbersome. The Steering Committee should define its mission, its strategies and its goals. It should also determine whether supporting research is required and what funding it should pursue to support its initiatives.

The Steering Committee will identify what Task Forces are necessary to implement its objectives, identifying potential members of these Task Forces and assist to recruit their members. One or two members of the Steering Committee should participate on each Task Force. These Steering Committee members will then be able to report the progress of their various Task Forces at Steering Committee meetings, which probably will occur quarterly and be face to face.

The Steering Committee will work closely with its facilitator to develop a distribution list of key stakeholders and a system for electronic distribution of information about the

issues that it is addressing and the actions and decisions that it has taken. This same broadcast email process will include detailed information about the action plans and progress of the task forces. The use of internet communication should be interactive, where through the mechanism of a Blog or other interactive mechanism; stakeholders can communicate with the Steering Committee and the Task Forces

Based on the results of this research a few of the possible task forces are:

Political – Employers with representation from county and local officials as well as state and federal elected officials.

Educational and Technical– Employers with representation from both campuses of Cal State and from Cal Poly, as well as representation from the Workforce Investment Boards in the region.

Finance – Employers with representation from economic development groups throughout the region, selected green businesses and financial institutions

Identifying Market Opportunities – Employers and economic development groups throughout the region.

Recruiting Supply Chain Companies to the Region- Employers and economic development groups throughout the region.

These Task Forces should initially develop detailed work plans with actions, responsibilities and time for completion included. They will probably meet monthly. Because of the distances that comprise the region, most of these meetings can be held by teleconferencing or videoconferencing.

The Steering Committee may choose other task forces or not include those recommended above. Each Task Force should develop a detailed action plan with assigned tasks, accountability and completion dates. Each should ultimately be accountable to the Steering Committee.

Funding should be sought to enable the Task Forces to add ad hoc experts in the fields that require solutions to the issues that they are addressing.

PART 2: RESEARCH FINDINGS FOR AGRICULTURE & WINERIES

In your view what are the current key factors to the success of your business (or industry)?

Central Coast Vineyard Team - The Central Coast Vineyard Team is a Nonprofit membership organization with 300 members from the agricultural sector. They represent the entire Central Coast, from Santa Cruz to Ventura Counties.

Their mission is to educate agricultural businesses to achieve sustainability through resource management, both through conservation and efficiency. They focus on water conservation and quality, energy efficiency, soil management, mechanization and integrated pest management.

They work with other agricultural associations and provide educational programs for them as well as their own membership. They also offer consumer education through events, such as their Earth Day fair.

They also offer a Standards of Excellence Certificate that rates ten chapters of farm management. There are a number of requirements for each category. Categories include subjects like:

- Irrigation

- Soil and water quality

- Energy Efficiency

- Biodiversity

- And others

Applicants for the certificate are audited and judged anonymously'

They perceive that the keys to agricultural success are:

- Relief from regulations

- Access to markets

- Ease of cross-marketing things like tourism

Darway Farms - Complying with regulations is the most important factor for success. Air and Water quality standards are much higher than those imposed on competitors from other states.

Marketing is a major issue, including finding new markets

Farm Supply Company - Farm Supply Company is cooperative with 2300 members. They supply most agricultural products . They pay taxes on their profits from sales, but any surplus of membership dues are distributed to the members.

The major factors for success are all related to economics. Marketing is crucial. Rancher and farmers must:

- Own their own property

- They must have adequate water

- They must have crop diversification, rather than rely on a single crop.

Gonzales Ranch - Products

They are a ranch primarily producing beef cattle. They also raise walnuts and almonds

Markets increase as global population increases. However, unnecessary regulation threatens their future.

Limoniera - Limoniera is an integrated grower, packer and shipper of lemons, other citric fruits and avocados. They are the largest lemon supplier in North America. Their international trade in lemons is currently 20% of their total production.

Proximity to markets and low cost distribution centers and transportation centers.

Best cost to value ratio as a producer.

Low cost and abundant water sources.

Their products are traceable and therefore perceived to be safe. Critical competitive advantage.

Having access to deep water ports. They need refrigeration and containerization. That is currently available from Long Beach and Los Angeles. There is a port in Ventura County, Port Hueneme that could develop the capabilities for refrigeration and containerization.

Paso Robles Wine Country Alliance-The biggest factor is available water. The wine industry is both implementing major conservation policies and looking for new water sources.

Ms. Jacob explained, “There is a disconnect between political policies and the industry’s own initiatives. Trust and a balance between residential and agricultural demands need to be established. We do not do a good job of educating policymakers.”

She continued, “A major threat are environmental groups. They operate on emotion rather than facts.”

There is a movement toward supporting locally grown products. Ms. Jacob asks, “How do we leverage that movement. There is the perception that small is good and that big is bad. The fact is that larger businesses have the resources to implement more procedures and technologies that are environmentally friendly.”

Pomar Junction Vineyard and Winery - The company manages vineyards, farming about 6,000 acres of grapes. They also have a tasting facility for tourists. Of the grapes raised in the region 60% are sent out of the region for processing.

The industry relies on seasonal Hispanic labor. They need a guest worker program – some greater certainty of a legal labor supply.

They also need :

- Heavy machinery operators

- The whole supply chain – Barrel makers, glass bottle manufacturers, and warehousing

- Marketing professionals

- Quality control laboratory professionals

- Winemakers

They rely heavily on Cal Poly, which has the largest concentration of students focused on grape production and winemaking in the country.

San Luis Obispo Vintners - Tourism is critical, because interfacing with tastings, vineyard tours and wine clubs is essential for the smaller producers.

The concept of from “Farm to Table” is a major basis for promotion of the industry and all of agriculture in this region. This concept involves selling a “commitment to healthy food, not processed food.”

Santa Barbara Vintners Association - Jim Fiolek believes that the factors for success are in place currently. The wine industry employs 5,000 people in Santa Barbara County. All of the grapes grown in the county are for the purpose of making wine, although not all of that wine is produced in the County. Of the vineyards in the County, 90% produce less than 10,000 cases of wine annually, and only three produce 50,000 cases or more.

The major areas that need to be addressed for success are:

- The disconnect between urban and rural areas.

- The encroachment of residential areas on land that is in use for agriculture

- Legislation that favors residential over agricultural owners.

Houweling’s Hot House - Houwelings grows tomatoes under glass. Under 168 acres of glass they produce 25X as much as acreage in the open. They produce year round the equivalent of what it would take 4,000 acres to produce outdoors. Their revenues are approximately \$75,000,000.

Their process involves the normal greenhouse requirements for heating, cooling, Carbon Dioxide, water and nutrients. Their operation is completely automated and fully computerized.

Their primary condition for success is to use technology to provide cost-efficiencies that can keep them competitive.

What occupations are critical for successfully addressing these factors?

Central Coast Vineyard Team - The organization does not have specialized knowledge of occupations and skills required by the industry, but they do perceive a growing need for agricultural research to develop technologies for future efficiencies and competitive economic advantages.

They also believe that the need for technical expertise will continue to grow for the management, operation and maintenance of solar energy, wind energy, biofuel production and utilization and resource management and conservation.

Darway Farms - Chris Darway indicated, “We need management level people who can track everything and address all compliance issues. This skill requires training at the community college or even university level.”

“Of course the entire industry requires principals with vision, people who will lead by example. I don’t ask people to do anything that I would not do.”

At the entry level, they need supervisors, tractor drivers and other machinery operators.

Darway explained, “Labor is a huge problem. Most of our employees are Hispanic. We need some kind of guest worker program.”

Farm Supply Company - The primary concern is sufficient agricultural labor, and immigration issues are an unresolved potential problem.

Gonzales Ranch - Their primary occupations are ranch labor. They need a guest workers program. If this program was in place the U.S. would not need to give away citizenship.

The only skills that they need are tractor drivers. They have worked extensively with Mexican workers, who are hard workers. They learn all of the necessary skills and do not need outside training.

Limoniera - Limoniera has multiple labor needs.

They need a reliable source of agricultural skilled labor. These workers must be documented and legal. They can be trained internally.

They also require a skilled labor pool for processing and packaging, which they also train internally.

Educated Management is their third critical requirement. At this level the skills that are necessary are:

- Business knowledge

- Knowledge of multiple languages

- An understanding of logistics

An agronomic educational experience is of some value. Harold Edwards explained, “We hire management level people who are graduates of Universities, such as Cal Poly, but the specialized education is less important than the ability to learn. Liberal arts students with that ability are just as valuable. We train them. In effect, we train the trainer.”

Limoniera finds it easy to recruit. They have low levels of attrition. Some of their laborers have families that have worked for the company for generations.

They have received vocational training funding for teaching English to non-English speaking employees and computer-related training, such as the use of spreadsheets.

Paso Robles Wine County Alliance - Critical are agricultural managers with horticultural knowledge that enables greater efficiencies in agricultural production.

Vineyards need wine makers “like restaurants need chefs.”

Sales and marketing are also crucial occupations. The consolidation of the distribution system makes it more difficult for smaller vineyards to distribute their products. Regional branding will be important – selling the region the way Napa has sold the region, so that even if the vineyard does not have name recognition the region will. Unity will be important to this effort. “The industry needs to work together.” Direct consumer sales will be important through the use of tastings and wine clubs.

Recruiting of science based salaried people and sales and marketing professionals is difficult, because of the cost of living and the need to pay high salaries. Also, the industry needs professionals that are not only highly trained, but also knowledgeable of the wine industry. Cal Poly is a tremendous resource. They are producing more graduates with an understanding of the sales, marketing and business management aspects of the industry.

Ms. Jacob explained, “More on-going producer education is needed. Also more agricultural research is crucial to continue to improve productivity and efficiency.”

Pomar Junction Vineyard and Winery -The industry relies on seasonal Hispanic labor. They need a guest worker program – some greater certainty of a legal labor supply.

They also need:

- Heavy machinery operators

- The whole supply chain – Barrel makers, glass bottle manufacturers, and warehousing

- Marketing professionals

- Quality control laboratory professionals

- Winemakers

They rely heavily on Cal Poly, which has the largest concentration of students focused on grape production and winemaking in the country.

San Luis Obispo Vintners Association - Becky Gray believes, “The major requirement for success at every level is hard work. The agricultural business involves good work ethics. I am not sure that these principles are cultivated in educational institutions. Graduates sometimes have unrealistic expectations.”

Management roles include operation of the property which involves technical knowledge of soil, water management, and other agricultural sciences. Cal Poly provides excellent programs in these areas.

Marketing is also critical in terms of event planning, promotion of tours, tastings, etc. Once retailers, restaurants and distributors are engaged “they sell for you.”

Sales at all levels to retail outlets, distributors and restaurants are vitally important.

The industry has no difficulty recruiting.

Education from Cal Poly is excellent. They have a “learn by doing” program which starts out in the fields.

Becky is not as familiar with field labor. The Pacific Vineyard Company is a Management Firm that manages most of the vineyards in San Luis Obispo. Contact persons are Scott Williamson and George Donatti. The number is 805-597-8700.

Santa Barbara Vintners Association - Most workers in vineyards are seasoned, not migratory workers. Many of these workers are highly knowledgeable, a skill that they have acquired through experience on the job.

Another critical occupation is the Vineyard Foreman. He lives at the vineyard and manages the workforce. His experience and skills have also been acquired over time on the job.

Administrative functions, such as human resources, are provided by subcontractors as management corporations.

Professionals with college degrees in agriculture act as consultants to many vineyards.

There is little difficulty recruiting workers. The vineyard foremen know them, and if as a result of seasonal variations, there is a larger than normal demand, this can usually be met by word of mouth. No formal education is required. The necessary skills and knowledge are acquired through experience. “Some of these workers are very smart and learn basically what each vine requires,” Jim Fiorek asserted.

Houweling’s Hothouse - Process Managers

Sophisticated knowledge of agriculture, ability to monitor demands for temperature, water, carbon dioxide and manage storage of these elements so that sufficient amounts are available to meet the demand.

Computer Experts

Programming, systems design, systems maintenance

Maintenance Engineers

Electricians, mechanical skills

All other employees need to be capable of dealing with complex systems requiring a high degree of sophistication.

Houweling finds it extremely difficult to hire competent people. All of their employees are internally trained. “The University system is totally inadequate for agriculture related occupations. Students have no hands on experience. Professors are out of touch. There used to be a lot of research going on at universities that was sponsored by businesses. There is a lack of cooperation between universities and business, partly because research now becomes part of the public domain. There is no proprietary protection.”

Apart from qualified personnel are there other current obstacles to the success of your business (industry)?

Central Coast Vineyard Team -The greatest obstacles are economic – the cost of labor, scarcity of capital and inefficiencies in operating costs.

Another major obstacle is increasing regulatory burdens, which are imposed and enforced by multiple agencies. These regulations often duplicate themselves. Recently, for example new water quality standards were imposed for the industry. Compliance is extremely expensive and not commensurate with the very modest improvements that would result.

Darway Farms – The absence of Guest worker passes and over regulation.

Farm Supply Company -The primary obstacles are regulatory issues. Agriculture in this region may be the most regulated industry in the United States. Smaller growers can have difficulty monitoring all of their various needs for compliance.

Urbanization is creating conflicting demands on water. Water systems are being utilized inefficiently by urban populations, and this indiscriminate usage is having a negative effect on agriculture. Some farmers make more money selling water to Los Angeles than they would using it to grow crops. There is a huge need for education about the symbiotic relationship between agriculture and the urban populace.

Gonzales Ranch - Regulations. For example new machinery is required that does not work. Gonzales stated, “The Government needs to get the hell out of business.”

Limoniera-Regulation and taxes are the biggest obstacles. California produces a difficult environment in which to do business. Local and regional bureaucracies add to cost and create delays in implementing innovations. Examples are the difficulty in expeditiously modernizing facilities, getting permitting for housing for employees, getting permitting for truck transportation and various regulatory restrictions on their real estate business.

Paso Robles Wine Country Alliance -As far as labor is concerned the immigration laws pose a threat. Also, the cost of living is too high. Workers are usually seasonal, with the larger vineyards able to employ a year-round core team. Paso Robles has initiated an affordable housing project, with the possibility of pooling resources within the wine industry to create a housing fund.

Also public policy is an obstacle. For example, there are restrictions on events being held on agricultural land. The primary opposition comes from residential owners, who adopt the “not in my backyard” position.

Pomar Junction Vineyard and Winery - “There are just too many regulations,” Merritt explained, “particularly at the local level. They are a pain in the neck. No one wants to invest with so much regulatory uncertainty. People just say the hell with it.”

One of the limitations to expansion is water. Vineyards use ground water, and the water on a vineyard’s land was theirs to use. Now there are regulations pending that could make that water available to anyone. “It is a tug of war between the cities and agriculture.”

San Luis Obispo Vintners Association - Onerous regulations. Becky Gray points out that “People do not understand. They think that organic farming is somehow synonymous with ‘green.’ Actually the reverse can be true.”

Santa Barbara Vintners Association - “There needs to be an integration of agricultural and urban concerns. Residents have built near to vineyards and find the requirements of farming obtrusive.” An example was the use of “propane cannons,” which were invaluable just before the harvest of the grapes. Because they were noisy there is now a county ordinance against their use. Residents also do not like the noise caused by trucks. An ordinance against cutting down oak trees is a hindrance to clearing arable land.

The cost of living is also an obstacle. “Where are the workers going to live?” Jim asked.

Additionally, there are clear prejudices against Latinos, who comprise the majority of vineyard workers.

Projecting into the future, what do you think are the greatest opportunities for growth of your business (industry) over the next five years?

Central Coast Vineyard Team – Any opportunities for future growth in the industry, the value add of turning grapes into wine, will only be realized if the current obstacles and limitations can be overcome.

Darway Farm - Darway expostulated, “Where food comes from will become more and more important. Food grown in the United States represents a safer food supply. Imported food does not have to comply with the same safety standards. Bring the jobs and the production home.”

Farm Supply Company - The key to future growth is the diversification of crops. Originally the area was devoted almost entirely to grains. Now it is Citrus, avocados, and grapes – with wine production.

Gonzales Ranch - There are growing global markets for food, and yet government regulations regarding cattle per acre have reduced this ratio to 1958 levels. These restrictions are “all environmental nonsense,” but they do mean that the supply cannot meet the demand.

Limoniera -The opportunities are global, particularly growing markets in China and India. Edwards explained, “We need public/private partnerships that connect companies to their local communities. These partnerships would help to solve many of the regulatory obstacles and expedite the attraction of private capital.

“Governmental officials are not obstructionist in principle. Their policies evolve from ignorance of the conditions under which businesses operate and their requirements for success. That is why public/private partnerships are so critical. We need open communication between the public and private sectors to resolve these problems.”

Paso Robles Wine Country Alliance - The Central Coast needs to get more branding that has the Paso and Central Coast names on the labels. Currently 50% of the grapes grown in the region are exported to other areas for wine production.

The primary opportunity is to develop distribution sites within the region. The region needs to develop the transportation and logistics to get wine moved to market. The opportunities are in logistics.

Pomar Junction Vineyard and Winery - The opportunities for growth are to convert more of the grape production into wine with two or three large producers leading the way. Much of the wine sold by smaller producers will have to be marketed directly. If wine production could be increased, then “we could attract supply chain companies, barrel makers, warehouse, bottlers and labelers.” Merrill explained.

San Luis Obispo Vintners Association - Ms. Gray expressed, “This is simple in an area like this with mostly small vineyards. Get people to the Central Coast with an interest in wine.” Word of mouth from retailers and restaurants is also very important, as is word of mouth from tastings and wine clubs.

Santa Barbara Vintners Association – Jim Fiolek explained, “What is needed is better branding for the wines from the Central Coast. My responsibility is, of course, for the vineyards in Santa Barbara County.” There are limitations on the expansion of the industry, because of the climactic conditions necessary to success. These, however, also provide an advantage in that there are pockets of different climactic conditions that make it possible to produce a wide variety of wines.

To support growth in each of these areas, what occupations will be critical?

Farm Supply Company –

Certified Crop Advisors

Persons knowledgeable about precision agriculture or mechanization

Pest Control Advisors

Even now these occupations are in short supply, partly because farming is harder work than most young people are willing to do.

Limoniera -The required occupations are largely the same as those required for current success, but they will place a much greater emphasis on Sales and Marketing. They will require the internal management of global distribution. Also persons with knowledge of real estate management and development will be required.

The skills needed are:

Management skills

Inter personal skills

Political Relations

The intellectual ability to perform qualitative analysis.

San Luis Obispo Vintners Association - These will all be marketing related and technical operational management.

Other respondents felt that the occupations and skill sets required for success will be essentially the same as those required for current success.

Apart from qualified personnel are there, in your opinion, other obstacles to the development of these growth opportunities

Gonzales Ranch - The same obstacles as current success. The Government has established a base level for energy usage. Gonzales claims, "You could not power a shack with these levels", so Gonzales pays a premium for being 400% over these mandated levels

Paso Robles Wine Country Alliance - The greatest obstacle in the future will be the continuing encroachment of residential property on agricultural land and the resulting competition for resources such as water. This process of "neighborhood pressures" will continue to grow.

San Luis Obispo Vintners Association - These obstacles are the same as those required for current success. However, technical agricultural expertise will need to expand to meet the needs of greater efficiencies and "sustainability."

Other respondents believed that the obstacles for future success were the same as those for current success.

The collaborative project for which this research is being completed has a significant emphasis on "green" initiatives. These would include industries that utilize alternative or renewable sources of energy, industries providing alternative or renewable energy, manufacturers of products that promote conservation of resources, energy efficiency, or the means of using renewable sources of energy or businesses that have implemented green processes or procedures.

Are you implementing any green technologies or procedures in your business (Are you familiar with companies in your industry that are implementing green technologies or procedures)?

Are there any occupations that are required specifically to utilize these technologies or implement these procedures?

Central Coast Vineyard Team - The Central Coast Vineyard Team believes that green procedures begin with conservation and efficiency. For example, sophisticated soil management (achieving a "biological balance") and the efficient use of water ("knowing how and when to irrigate"). Also, they advocate the use of machinery that creates efficiencies – tractors that can do multiple tasks in a single pass and mechanical pruning and leaf clipping. These processes will improve production while reducing the use of energy and creating efficiencies that result in cost-savings and greater profitability.

Darway Farm - Darway indicated, "I don't apply green technologies. I've looked into it, and solar energy is just not profitable."

Farm Supply Company -Members are using integrated pest management where insecticides are not necessary.

Organic materials are being used as nutrients for the soil, rather than chemicals. This adds to the health of the soil and its resistance to disease causing organisms.

Water management plans for wells and reservoirs, allowing for maximum utilization of existing resources.

Gonzales Ranch - They pump all of their own water. The surtax on energy makes it almost economically feasible to install solar.

Limoniera -Edwards explained, “We are good stewards of our resources.” They rely heavily on solar energy. Roughly, 2/3 of their energy comes from this source. This emphasis on “sustainability” has direct cost benefits and also advantages in the marketplace, which is more sensitive to sustainable producers.

They have a partnership with a waste hauler that enables them to convert much of their organic waste into high quality organic mulch.

They also manage and have reduced their water usage.

All of these practices have enabled them to increase their production.

They also believe that the major component of their resources is their human workforce. It is their greatest asset and they invest in it. One half of all of their employees are housed in their facilities. A corollary investment is their philanthropic relationships with community colleges and Universities.

Paso Robles Wine Country Alliance - The wine industry has increasingly applied water conservation, primarily through “drip irrigation,” but also through the use of machinery that limits water usage.

The utilization of solar energy is also increasing dramatically.

Pomar Junction Vineyard and Winery - Pomar was one of the first practitioners of the “sustainability” model. They comply with the standards of excellence of the Central Coast Vineyard Team. They have several thousand acres that are certified by this group. There are other vineyards who are audited by third parties for a higher level of certification.

San Luis Obispo Vintners Association - Of the vineyards in the county 90% are SIP (Sustainability in Practice) certified. This certification not only involves “doing what is best for the soil, water management and energy conservation. They also involve community service and employee policies and benefits.” The Central Coast Vineyard Teams establish the standards and administer the certification process.

Santa Barbara Vintners Association -The industry has used principles of water management for 20 years. The industry uses a “drip” system to water each plant, rather than watering all of the land. Fortunately, grapevines are extremely draught resistant.

Many vineyards use solar energy to power their water pumps.

There have been discussions of using biofuels to power farm machinery, many of which could be manufactured using the vineyard’s own organic waste..

These initiatives have been demonstrated to have economic advantages, and in some cases a direct effect on the quality of the wine.

Houweling's Hothouse -They utilize solar energy and are energy self-sufficient. They also employ a process of heat recapture from their cooling systems. They extract the heat from their cooling systems, which otherwise would be lost into the air. They capture this heat in water and use it then to heat their greenhouses. They adopted these technologies not purely for environmental reasons. "Green technologies can create efficiencies that enable my business to be competitive. My alternative would have been to move this operation to Mexico."

Houweling plans to install a cogeneration facility. Natural gas will power 6,000 horsepower generators. They will strip the carbon dioxide from the process for the growth of their plants, and they will recapture the heat energy in water and recycle it. They will sell excess electricity back to the grid.

"Current electric generation has about 40% efficiency. They cool the heat generated with water and release it as waste. Cogeneration has an efficiency of about 102%."

Casey Houweling explained, "With all of the renewable energy ideas, the real low hanging fruit is the energy we waste."

Regulations are the biggest hurdle. "The process is costly and you lose 1 ½ to 2 years. That amount of time is a huge resource to business."

Houweling believes, "We cannot envision future technologies until they happen, but in the future it will be necessary to build integrated utilization of resources into the business model. What is one businesses waste may be another businesses resource. Someone with the vision to see the big picture would have to coordinate this effort. Current legislation actually encourages waste."

Do you know of other businesses in your industry that are significantly implementing green technologies or procedures?

Fox's New Winery is an example of the application of some of these technologies

Talley Farms

Darway Farms

Gills Onions

Amgen, which is a biotech company.

The Jay Lohr winery has installed three acres of solar panels that rotate with the sun.

(If Winery or Model Green Agricultural Business) Do you perceive opportunities to interface with the tourism industry to, for example, provide tours of your operation?

Farm Supply Company -Brabeck stated, "The primary attraction of the Central Coast is agriculture, vineyards and the ecological practices that are being applied here."

Limoniera -They have received permitting for Agrotourism. They provide visitors with many activities. This process actually assists their branding efforts.

Pomar Junction Vineyard and Winery -Merrill believes that these opportunities are great, particularly for wine tasting tours and eco tours based on SIP standards (Sustainability in Practices).

San Luis Obispo Vintners Association - Becky Gray considers this interface to be very important. Collaboration with local organizations such as Chambers of Commerce and Visitors Bureaus is ongoing. How this collaboration might be extended regionally Ms. Gray is uncertain, but she considers the possibilities intriguing.

In order to get beyond the research stage into the planning and implementation stages, the Agricultural Industry Cluster will have to establish a regional organizational mechanism, where every important stakeholder group is represented. Whatever the model, would you be willing to serve as a part of it? Who else, in your opinion should be a part of the group implementing this initiative?

Central Coast Vineyard Team - Kris O’Conner asserted, “We would certainly want to participate as part of any organizational model that you develop. We are the wine industry’s network on the Central Coast. That’s what we do. We could contribute a lot, particularly with regard to credibility.”

Darway Farms -Darway stated, “I don’t want to say no, but I have a lot of other commitments. I would have to be very convinced of the value of participating.”

Farm Supply Company -Brabeck asserted, “It is an absolute necessity to have a regional approach, to pool resources collaboratively. There is so much commonality. If you get this initiative to the action stage, count me in.”

Gonzales Ranch - Richard Gonzales is a Farm Bureau President and has lobbies at both the State and National levels. He would “absolutely participate” if the initiative can be taken to the action level.

Limoniera - Edwards explained, “We have a seasonal business. The Southern Hemisphere’s seasons are the opposite of ours. We can exploit this natural situation. We can become a food distribution hub. We can establish trade alliances with foreign sources of supply. Then we would have a 365 day a year business.

“This kind of opportunity is why we should have an agricultural regional initiative. I absolutely want to participate.”

Paso Robles Wine Country Alliance -Stacey Jacob concurs that she would like to participate in a regional initiative, “Absolutely. This sort of collaboration is the only way these obstacles that I have mentioned will be addressed.”

Pomar Junction Vineyard and Winery -Merritt welcomes the opportunity for dialogue and hopefully action. He believes that a collaborative group could address regulatory issues, promote the development of a supply chain around the industry and help to deal with labor issues.

San Luis Obispo Vintners Association - Becky Gray could not commit to participation in the proposed initiative without the approval of her Board. All of the possible objectives are of interest to her including:

Regulation

Coordination with educational institutions

Regional promotion

Santa Barbara Vintners Association - “I can see benefits in a regional collaborative approach to political and social issues, exchange of information about new technologies and collective branding,” Jim Fiorek explained, “Certainly I would like to participate, if others could put up with my being a termagant.”

Houweling’s Hothouse -Case Houweling indicated that he would be willing to participate, but only if it was “productive.” He has participated at the state level on green energy committees. “All we did was to waste money on more studies. Action was what was needed, but nothing happened. It is the same with water. We addressed the problem ten years ago, but nothing has happened.”

He would consider both the prerequisites, the structure of the collaborative and its members to determine if he felt that it was capable of action.

CONCLUSIONS

Current Key Factors to Success

The Central Coast Vineyard team believes that sustainability through conservation and efficiency are the keys to success, based on their standards of excellence program.

Most of the respondents felt that complying with regulations was necessary for success and a unnecessary burden on competitiveness. These are often the result of a disconnect between political policies and the industry’s own initiatives – a problem of trust and balance between residential and agricultural demands.

Effective marketing was also cited frequently as a key to success.

Management of the water supply is critical as is crop diversification.

Some of the respondents, like Limoniera, were considering the potential of exporting agricultural products and therefore needed low cost distribution and transportation centers, including deep water ports.

Another issue for success is farm labor, with concern over their legal status. The agricultural industry needs a guest worker program.

Tourism is also essential for the smaller vineyards and also ecotourism for other agricultural concerns. For smaller vineyards interfacing with tastings tours and wine clubs is a basis for success.

The concept of farm to table is also important, involving a commitment to “healthy food, not processed food.”

The added value of producing grapes for wine and producing that wine in the region rather than shipping those grapes to other wine producing regions is also a factor in achieving success for the industry in the Central Coast.

Ultimately the use of green technology and cost effective technology is the key to success.

Occupations Critical to Current Success

Technical expertise for the use of energy efficient and productivity.

Management level people trained to address compliance issues.

Principals with vision.

A guest worker program for farm labor.

An agronomic educational experience is of some value

Sales and marketing professionals.

Computer experts and maintenance engineers are also required.

Obstacles to Current Success

The greatest obstacles are economic – cost of labor, scarcity of capital and inefficiencies in operating cost.

Most of the respondents mentioned regulation as the major obstacle. Regulatory burdens impose compliance expenses which are not commensurate with the modest improvements that would result. The difficulty of obtaining permitting is a related issue. The cost and delays associated with obtaining permitting is preventing innovation.

The next most important issue is associated with immigration. The absence of guest worker passes creates conflicts associated with hiring legal workers.

Urbanization is creating conflicting demands on the water supply. “It is a tug of war between the cities and agriculture.”

The cost of living is also an obstacle. “Where are the workers going to live?” For the same reason it is difficult to recruit management level, sales and technical people.

Opportunities for Future Growth

For vineyards the value added of turning grapes into wine produced in the region is paramount. Branding associated with the Central Coast will support the additional wine production. Distribution sites and logistics (bringing wine to market) are also essential.

Attracting tourists to the area who have an interest in wine and smaller vineyards marketing directly to restaurants and wine aficionados will promote growth for the smaller vineyards. Word of mouth from retailers and restaurants, also from tastings and wine clubs will also contribute to the promotion necessary for the smaller vineyards.

The supply chain of barrel makers, warehouses, bottlers and labelers could be stimulated by growth in wine production on the Central Coast.

Bringing jobs and production home for a safer food supply will be another basis for growth.

On the other hand there is a growing global demand for food supply that California could help to meet, if regulations and taxes were competitive, the labor issues could be solved and transportation and infrastructure to support exports could be developed.

Success will also be based on open communication between the public and private sectors to solve the regulatory problems.

Diversification of crops is another factor for future success.

Occupations to Support these Opportunities

Certified Crop Advisors

Persons knowledgeable about precision agriculture and mechanization and technical operational management

Pest Control Advisors

Sales and Marketing

Management of Global Distribution

Obstacles to Growth Opportunities

Governmental regulations. An example is base level energy usage. “You couldn’t power a shack with these levels.”

The “neighborhood encroachment “ of residential property on agricultural land and the resulting competition for resources.

The remaining respondents felt that the obstacles to current growth would remain the same in the future.

Green Initiatives

Soil management (“achieving a biological balance”) and efficient use of water (“knowing how and where to irrigate”) are prevalent in the wine industry. “Drip irrigation” is one water management tool. Of the wineries in the count 90% are certified as SIP (Sustainability in Practice.)

Efficient use of machinery – tractors that do multiple tasks in a single pass and mechanical pruning and leaf clipping conserve resources.

Integrated pest management where pesticides are not necessary.

Organic materials as nutrients. Converting organic waste into high quality organic mulch.

Reliance on solar energy, which is economically feasible with subsidies. An increasing number of agricultural producers are using it.

Many businesses are considering using their own organic waste to produce biofuels.

Businesses like Houweling's Hothouse not only use solar energy, but they recapture heat from their cooling systems to heat their greenhouses. They also plan to develop a cogeneration facility, which will not only provide power, but will be a source of carbon dioxide to stimulate the growth of their plants.

Hoewelings stated that the “low hanging fruit” is the energy that is wasted, particularly heat, which could be reclaimed. Unfortunately, regulations impede the process even of utilizing renewable energy, because the process of getting permitting is costly and “you lose 2 years. That amount of time and money is a huge resource for a business.”

Other Agricultural Businesses Implementing Green Technologies

Fox's New Winery

Talley Farms

Darway Farms

Gills Onions

Amgen, which is a biotech company

The Jay Lohr Winery has installed three acres of solar panels which rotate with the sun.

Opportunities for Interface with the Tourism Industry

Respondents averred that “the primary attraction of the Central Coast is agriculture, vineyards and the ecological practices being applied here.” Limoniera has received permitting for Agrotourism. Wine tasting and SIP tours provide a real opportunity. Collaboration for this process with Chambers of Commerce and Visitors Bureaus will facilitate the development of regional wine and eco tours.

Participation on Steering Committee and Task Forces

Most of the interviewees expressed a strong interest in participating in this initiative. The Central Coast Vineyard Team definitely wants to participate. “We could contribute a lot, particularly with regard to credibility.”

Farm Supply Company is also a strong advocate of the regional approach of pooling resources collaboratively. “There is so much commonality in the region.”

Limoniera wants to participate, because they see the regional approach as a way to promoting global exports.

The Paso Robles Wine Country Alliance believes that only a regional approach will be effective in overcoming the obstacles to agricultural success in the Central Coast.

Pomar Junction Vineyard and Winery also feels that only a collaborative group can address regulatory issues, promote the development of a supply chain around the industry and cope with labor concerns.

The Santa Barbara Vintners Association can see the advantage of a collaborative approach to political and social issues, exchange of technological issues and branding.

Some of the interviewees, however, had reservations. Darway Farms would have to be convinced of the value of participating. Gonzales Ranch would absolutely participate if there was evidence that the initiative was being taken to the action level. Becky Gray of the San Luis Obispo Vintners Association could make no commitment without her Board of Directors approval, but the objectives of interest to her organization are: Regulation, Coordination with educational institutions and regional promotion.

Case Houweling indicated that he would be willing to participate, but only if it was “productive.” He has participated at the state level on green energy committees. “All we did was to waste money on more studies. Action was what was needed, but nothing happened. It is the same with water. We addressed the problem ten years ago, but nothing has happened.”

He would consider both the prerequisites, the structure of the collaborative and its members to determine if he felt that it was capable of action.

RECOMMENDATIONS FOR AGRICULTURE AND WINERIES

The development of a regional initiative for the agricultural industry cluster should begin with the recruitment and formation of a Steering Committee. The Committee should consist of representatives from leading agricultural businesses, winery associations, and economic development professionals. Representation from other sectors should comprise the action task forces instead of the Steering Committee, to prevent the Steering Committee from becoming cumbersome. The Steering Committee should define its mission, its strategies and its goals. It should also determine whether supporting research is required and what funding it should pursue to support its initiatives.

The Steering Committee will identify what Task Forces are necessary to implement its objectives, identifying members of these Task Forces and assisting to recruit their members. One or two members of the Steering Committee should participate on each Task Force. These Steering Committee members will then be able to report the progress of their various Task Forces at Steering Committee meetings, which probably will occur quarterly and be face to face.

Based on the results of this research there are a number of possible task forces:

Political – with representation from county and local officials as well as state and federal elected officials.

Educational and Technical– with representation from both campuses of Cal State and from Cal Poly.

Marketing and Tourism – with representation from tourism groups throughout the region as well as selected agricultural businesses

Global Opportunities – public and private representation

The Steering Committee may choose other task forces or not include those recommended above. Each should develop a detailed action plan with assigned tasks, accountability and completion dates. Each should ultimately be accountable to the Steering Committee.

Funding should be sought to enable the Task Forces to add ad hoc experts in the fields that require solutions to the issues that they are addressing.

PART 3: RESEARCH FINDINGS FOR TOURISM

In your view what are the current key factors to the success of tourism in the region?

San Luis Obispo County Tourism Improvement District - County wide collaboration is essential. There are five BIDs (Bureau Improvement Districts) in the County. These need to pool resources to promote the County. TOT funding is also essential. DCB is a County-wide marketing entity. It is establishing an alliance among the various marketing entities.

Four Points Sheraton and Ventura County Visitor and Convention Center –

The County also needs better transportation – more flights from the airport to major hubs.

Weather and location are key assets

Available hotel space

Having a skilled workforce is critical

Effective marketing is essential

Affordable housing for employees

Public transportation that accesses the areas where most employees live

Air service to Oxnard

Within the region Ventura County as a destination often is secondary to other areas, like Santa Barbara, Monterey and Santa Cruz

Marriott -The County benefits from its membership in Central Coast Visitors Guide

There is an identity issue for Ventura County. Are they a part of the Central Coast region or the Southern region. They are a day trip from Los Angeles. The County needs to create an identity, and if that identity interfaces with a region, that interface also needs to be defined for them to be successful.

To be successful they need a Civic Center and possibly a Convention Center.

They also need a communication plan to address the reservations from the general population against tourism.

Visit Oxnard -Janet Sederquest stated, “We need funding to promote tourism as a region. Currently, Ventura County is off the radar as a destination. We are doing a better job of collaborating, however, through the Central Coast Tourism Council. We do need funding for the BID’s, but these cannot be as local as in the past.”

HOFSA House - Hofsa House is a boutique inn that was established 60 years ago with 38 rooms. They emphasize family hospitality.

Highway One needs to be maintained. It is a regional resource that is a unique scenic resource.

Marketing of the Central Coast needs to continue. Funding for tourism marketing had been cut back and was restored by the former governor. That initiative needs to continue.

AG Tours

Evan Oakes’ background is as a research scientist in Viticulture for the University of California. Through that position he also learned about vegetables and ornamental flowers. He started AG Adventure Tours in 1997 with a focus on Agra tourism and wine tasting.

Evan Oakes explained, “This is the perfect place to do it – to integrate agriculture and tourism. There is a stable hospitality and tourism industry.”

Evan believes that they key factor for success is a strong economy. “Businesses plan retreats here during good economic times, and cut back on that in bad economic times. They represent a large part of our business.”

What occupations are critical for successfully addressing these factors?

San Luis Obispo County Tourism Improvement District –

Hospitality management

Winemaking

Marketing to promote events.

There are difficulties recruiting management level positions. The cost of living makes compensation an issue. Also, Cheryl Cuming explained, “There is a problem with trailing spouse. There are not enough opportunities here for them.”

Training and educational needs include hospitality management. Degrees are offered by Cal Poly and other state institutions. Educational offerings for marketing degrees at Cal Poly are minimal.

Four Points Sheraton and Ventura County Visitor and Convention Center –

They have difficulty attracting qualified sales personnel.

Additionally, there is a problem with front desk agents who are customer friendly. There has been a steep decline in the interpersonal skills of younger people.

Some organizations like Marriot and Southwest Airlines address this problem with internal training.

There is also difficulty in hiring qualified housekeeping personnel. Only 1-4 qualify, partially for legal reasons.

Marriott-

Hotel Management – Marriott trains internally and recruits from college programs across the United States.

Housekeeping

Culinary – recruit from local schools

Maintenance

Grounds keeping

Accounting

Human Resources

They have little difficulty recruiting and most of this recruiting is done through Marriott, not locally. For that reason they have no real requirements from regional Universities and community colleges.

Visit Oxnard-The needs are people with experience operating tours and doing all of the administrative things that are required.

Recruiting can be difficult for management level people. Because the Central Coast is a rural area, it is very difficult to find a dedicated worker pool. “People here are very laid back.”

The educational system is not producing people trained in the hospitality management business, travel agents and people with customer service training. All of these specific skills seem not to be addressed by the educational system. Sederquest claims, “There

are no programs for people with travel and tourism related degrees. Also, it is very difficult to find persons qualified to be Directors of Sales.”

HOFSA House-

Effective marketing people

Hotel Management

Frontline Staff – Customer Service People

Carrie Theis has no difficulty recruiting and has very little turnover. Monterey Community College has a two year hospitality program and Cal State Monterey Bay is considering developing a four year hospitality program. The area had a culinary program through a trade school that is out of business.

AG Tours - “The primary need for the industry as a whole is ‘front of the house’ operators – customer service people,” explained Dr. Oakes. Good ones are difficult to find and keep.”

Apart from qualified personnel are there other current obstacles to the success of tourism in the region?

San Luis Obispo County Tourism Improvement District -Ms. Cuming believes, “The biggest obstacle is the ‘closed door mentality.’ People say ‘We don’t need more people.’ There are the obstacles of territoriality and the ‘We don’t need change’ mentality.”

Four Points Sheraton and Ventura County Visitor and Convention Center –

Education is one. There are currently no hospitality management programs in any of the regional Universities and Community Colleges.

On-line promotion is essential, but internal IT personnel are prohibitively expensive and outsourcing is becoming unaffordable. A greater supply of qualified people in these occupations is essential, since currently they can demand their own price.

The cost of housing is a great deterrent.

Marriott

Ms. Seminario stated, “There is a lack of awareness of Ventura County. Various parts of the County compete against each other for convention business. There is no cohesive organization of these efforts within the County, let alone regionally.”

She added, “Our biggest challenge is selling space during the week. That is a promotional issue.”

Visit Oxnard -Current promotion is at times provincial and does not involve destinations in Ventura County.

There is no main gateway by air into the area.

HOFSA House

The major factor is the economy.

Ms. Theis also stated, “It is very difficult to do business in California, because of regulations. For example the legislature is considering a law where all hotels must have fitted sheets.

There is also a shortage of available capital for upgrading properties. The decline in real estate values is one reason for this shortage.

AG Tours –

The economy is the primary obstacle. Transportation- the price of gasoline and the traffic are other obstacles.

Monterey competes with more high profile areas like Napa, Sonoma, Paso Robles, and Tahoe.

“The Central California Tourism Council does a good job of promoting the concept of people traveling the whole coast,” opined Evan Oakes.

does a good job of promoting the concept of people traveling the whole coast,” opined Evan Oakes.

Projecting into the future, what do you think are the greatest opportunities for growth in tourism over the next ten years?

San Luis Obispo County Tourism Improvement District -Funding of tourist promotion is critical to future success. This process should involve partnering and collaboration.

One niche pointed out by Ms. Cuming is filmmaking. The permitting process should become more manageable to allow filmmaking in the region.

Four Points Sheraton and Ventura County Visitor and Convention Center “We have the best weather in the world. Canada is a huge market for us, if we have the means of exploiting it. We need to draw more attractions, events, sports, festivals and so on. We need also to develop more tours in partnership with tour providers that will tour the entire region. These tours may appeal to retired baby boomers.”

Marriott - They need to promote group visits and corporate retreats. They also need to promote tours for small groups with multiple destinations. Ms. Seminario commented, “Currently we cannot accommodate large groups. A convention center would be a possible solution. Also we need to solve the problem of attracting week-day business. Another issue is that we are very dependent upon the near-by naval base for week-day business . There is a huge risk placing so much dependency on this military base.”

Visit Oxnard - ‘AG tourism’ provides a major opportunity. These opportunities involve ‘tech tours.’ And also self-guided tours. There are opportunities for meeting planners to offer day trips in the region. Post and pre-conference excursions are important. Cruise ship shore excursions also present opportunities.

Because the travel industry is very global, the area needs global promotion, with tours tied to a major destination that is internationally recognized.

HOFSA House

Ms. Theis does not see many opportunities for growth, except for a change in the economic climate. To promote growth in her current business she needs internet marketing, branding and public relations. Internet marketing can be a double edged sword because of negative reviews.

AG Tours

The economy is the predominant factor, and the ability to attract business groups.

Better marketing of wine and agriculture as a tourist attraction.

To support growth in each of these areas, what occupations will be critical?

All interviewees felt that the critical occupations were the same as the present ones.

Apart from qualified personnel are there, in your opinion, other obstacles to the development of these growth opportunities

Visit Oxnard –

A lack of transportation into the region

A lack of promotion of the region and qualified people to design and execute the communication strategies that are necessary.

Collaborative rather than provincial promotion.

AG Tours –

“Room prices and other costs associated with traveling here are a deterrent,” Dr. Oakes explained.

Water is another obstacle. “Without an increase in the water supply, you cannot do much development. It’s hard to expand. But there is no point in building more hospitality facilities with so many empty rooms as it is.”

Other interviewees felt that the current obstacles will apply in the future.

The collaborative project for which this research is being completed has a significant emphasis on “green” initiatives. These would include industries that utilize alternative or renewable sources of energy, industries providing alternative or renewable energy, manufacturers of products that promote conservation of resources, energy efficiency, or the means of using renewable sources of energy or businesses that have implemented green processes or procedures. Are you familiar with any of these?

Are you applying any of these?

Do you know of other companies that are?

San Luis Obispo County Tourism Improvement District –

The winemaking industry is applying water conservation techniques and solar energy.

There are also green architects and green builders in the area.

Four Points Sheraton and Ventura County Visitor and Convention Center - All of the major hotel chains have a “huge green push.” This involves conservation – light bulbs, measuring waste, water and fuel. Four Points uses recycled water. The hotels achieve certification in this process. Other measures include composting and buying locally grown food employing green farming practices

Marriott - Marriott has an energy star rating. They have upgraded lighting automation. Air conditioning is on timers. Water usage is automated.

Visit Oxnard –

The hospitality industry has taken the lead in this area employing recycling, and water conservation practices.

Other measures include composting and buying locally grown food employing green farming practices.

HOFSA House

HOFSA House utilizes recycling programs and all forms of conservation. They use drip irrigation and waste management procedures.

AG Tours-

“Of course my business embodies green, but the wineries here recycle everything possible and conserve water through drip irrigation and other procedures. The hotel industry is also committed to green practices,” Dr. Oates asserted.

Do any of these green initiatives provide opportunities for tourism?

Can you think of any ways that the agricultural assets of the region can also be used as assets for tourism?

San Luis Obispo County Tourism Improvement District -An alliance between the wine associations, the Farm Bureau and tourism associations could promote this interface. There is a wide range of things to see from Seafood farming and processing to winemaking, as well as eco tours, which are currently being promoted.

Four Points Sheraton and Ventura County Visitor and Convention Center –

There are opportunities for eco and green agriculture conventions

Eco and wine tours are already being promoted

Some agricultural tours take an historical perspective and project that perspective into the present.

Attractions:

BEYLIK FAMILY FARMS
BROKAW NURSERY, INC.
CALAVO GROWERS
CALIFORNIA STRAWBERRY FESTIVAL
CENTRAL MARKETDEARDORFF-JACKSON CO.
FAULKNER FARMS (UNIVERSITY OF CALIFORNIA DAVIS HANSEN TRUST
AGRICULTURE LEARNING CENTER)
14292 WEST TELEGRAPH ROAD SANTA PAULA, CA 93060 (805) 662-6948
FILLMORE INSECTORY
FILLMORE FISH HATCHERY
FRIEND'S RANCH
LIMONEIRA TOURS
MCGRATH FAMILY FARMS
NATURIBE BERRY GROWERS
NEW OAK RANCH
OJAI CERTIFIED FARMERS MARKET
OJAI OLIVE OIL
OXNARD LEMON COMPANY
PLEASANT VALLEY FLOWERS
PICTSWEET/VENTURA MUSHROOM
RANCHO CAMULOS
REGALO OLIVE OIL
SAN MIGUEL PRODUCE
SANTA PAULA CHRISTMAS TREE FARM
SANTA PAULA CITRUS FESTIVAL
SOUTHLAND SOD
TIERRA REJADA RANCH
UNDERWOOD FAMILY FARMS
VENTURA COUNTY CERTIFIED FARMERS' MARKETS
VENTURA COUNTY WINE TRAIL

Marriott- The Channel Islands offer Eco Tours, and utilize bike trails. Patagonia is a company that supplies outdoor gear and promotes Eco tours and related tourism in the area.

HOFSA House

Ms. Theis explained, “Being green is a part of our differentiation. It is huge.”

Agricultural assets are great for tourism- touring vineyards and farms. For HOFFSA House these are currently day trips and not connected to any regional approach.

Ms. Theis also believes that “freshness of the food is an asset for tourism, which is a feature that local restaurants promote.

AG Tours

In Evan Oates’ experience tourists do not ask for eco tours. On Agro tours education is the motivating factor, and farmers from other areas comprise the majority of the participants. “Diversity of crops and the high-tech aspect of farming on the Central Coast are what draw people to the Agra tours. The appeal of the wine tours is self-evident, but I also give people some background in viticulture.”

Dr. Oates has always believed that a culinary tour program would be successful. Farms and ranches would have culinary visitor centers for tourists, where they could taste various foods and get some background on what they were eating. These culinary tours would tie into restaurants promoting that their food was fresh and homegrown.

In order to get beyond the research stage into the planning and implementation stages, the Tourism Industry Cluster will have to establish a regional organizational mechanism, where every important stakeholder group is represented. Whatever the model, would you be willing to serve as a part of it? Who else, in your opinion should be a part of the group implementing this initiative?

San Luis Obispo County Tourism Improvement District - Cheryl Cuming believes that the “territorialism” of San Luis Obispo is being overcome through more collaboration of organizations within the County. She can see the advantages to expanding this collaboration throughout the Central Coast and would be “delighted” to participate.

Four Points Sheraton and Ventura County Visitor and Convention Center -There are already initiatives. The state has a public relations program that recognizes the Central Coast as a region. There is a Central Coast Visitors Guide and several other organizations including vintner and agricultural associations. Victor Dollar expressed the opinion, “There is a need for a regional initiative, not necessarily a new organization, but a collaborative of existing organizations with representation from each. Then they would all pull together.”

Marriott -Ms. Semanario explained, “The problem is there are so many groups already addressing these tourism issues and ample funding for promotion. There is unfortunately no centralization or over-all direction of these efforts. If you could develop a collaborative effort that includes the existing groups as representatives, and there could be some agreement on the coordination of their efforts, I would be happy to

participate. That collaboration will be difficult to accomplish in Ventura County, let alone the Central Coast.”

Visit Oxnard -Janet Sederquest is very interested in these initiatives. “The proposed regional collaboration is a creative opportunity for the Central Coast.”

HOFSA House

Ms. Theis is on the Board of Directors of the Monterey Bay Visitors and Convention Bureau and has no time to participate on other committees. She recommends, however, using someone from the Monterey County Visitors and Convention Bureau on the Steering Committee.

AG Tours

Dr. Oakes Response was “At least I’d like to give it a try. Let me know what is happening.”

CONCLUSIONS

Key Factors for Success

Everyone agreed that economy is the major factor, particularly for businesses planning retreats and Meetings.

Transportation is major factor, whether it involves direct air access to Oxnard, or connections to more major hubs.

Weather, location and available hotel space are huge assets.

Marketing is a major component for success. Funding for BIDs is an issue. The Central Coast Tourism Council is doing a good job. Funding at the State level for marketing must be sustained.

Ventura County has not established an identity, a brand. The same can be said of the Central Coast as a region.

Affordable housing and public transportation to work from the places they live is a factor for success of the hospitality industry.

Critical Occupations for Success

Repeatedly ‘frontline staff’ with interpersonal skills were mentioned as an occupation particularly critical. “Younger people are lacking in interpersonal skills.” Marriott and Southwest Airlines address this problem through internal training.

Recruiting key management people is difficult, because of the cost of living and the lack of opportunities for the “trailing spouse.”

Housekeeping personnel are also a problem, since 1 out of 4 applicants cannot be hired, partly for legal reasons.

Hospitality Management

Winemaking

Marketing Professionals

Culinary

Maintenance

Groundskeeping

Accounting

Human Resources

Sales, which is an occupation that is difficult to recruit

Tour operators and travel agency professionals

Obstacles to Current Success

The two largest concerns were the state of the economy and marketing.

“The biggest obstacle is the ‘closed door mentality.’ People say ‘We don’t need more people.’ There are the obstacles of territoriality and the ‘We don’t need change’ mentality.”

There are currently no hospitality management programs in any of the regional Universities and Community Colleges.

On-line promotion is essential, but internal IT personnel are prohibitively expensive and outsourcing is becoming unaffordable. A greater supply of qualified people in these occupations is essential, since currently they can demand their own price.

The cost of housing is a great deterrent.

“There is a lack of awareness of Ventura County. Various parts of the County compete against each other for convention business. There is no cohesive organization of these efforts within the County, let alone regionally.”

There is no main gateway by air into the area.

It is very difficult to do business in California, because of regulations. For example the legislature is considering a law where all hotels must have fitted sheets.

There is also a shortage of available capital for upgrading properties. The decline in real estate values is one reason for this shortage.

The Central California Tourism Council does a good job of promoting the concept of people traveling the whole coast,”

Opportunities for Future Success

Funding of tourist promotion is critical to future success. This process should involve partnering and collaboration.

The permitting process should become more manageable to allow filmmaking in the region. Canada is a huge market for the Central Coast, if they have the means of exploiting it.

The Central Coast needs to draw more attractions, events, sports, festivals and so on.

They also need to develop more tours for small groups with multiple locations in partnership with tour providers that will tour the entire region. These tours may appeal to retired baby boomers.

They need to promote group visits and corporate retreats.

'AG tourism' provides a major opportunity. These opportunities involve 'tech tours.' And also self-guided tours. There are opportunities for meeting planners to offer day trips in the region. Post and pre-conference excursions are important. Cruise ship shore excursions also present opportunities.

Because the travel industry is very global, the area needs global promotion, with tours tied to a major destination that is internationally recognized.

Occupations Required for Future Success

All interviewees felt that the critical occupations were the same as the present ones

Obstacles to Future Success

A lack of transportation into the region

A lack of promotion of the region and qualified people to design and execute the communication strategies that are necessary. Collaborative rather than provincial promotion.

"Room prices and other costs associated with traveling here are a deterrent,"

Water is another obstacle. "Without an increase in the water supply, you cannot do much development. It's hard to expand. But there is no point in building more hospitality facilities with so many empty rooms as it is.

Other interviewees felt that the current obstacles will apply in the future.

Application of Green Technologies and procedures

The winemaking industry is applying water conservation techniques, rigorous recycling practices and in some cases renewable fuels.

There are also green architects and green builders in the area.

All of the major hotel chains have a “huge green push.” This involves conservation – light bulbs, measuring waste, water and fuel. Recycled water is used and water usage is automated. The hotels achieve certification in this process. Other measures include composting and buying locally grown food employing green farming practices.

Opportunities for Tourism from Green Practices and Agriculture

An alliance between the wine associations, the Farm Bureau and tourism associations could promote this interface. There is a wide range of things to see from Seafood farming and processing to winemaking, as well as eco tours, which are currently being promoted.

There are opportunities for eco and green agriculture conventions

Some agricultural tours take an historical perspective and project that perspective into the present. Ventura County alone promotes 27 agricultural tours.

The Channel Islands offer Eco Tours, and utilize bike trails. Patagonia is a company that supplies outdoor gear and promotes Eco tours and related tourism in the area.

AG Tours did not feel that there was a demand for eco tours. In addition to an historical background, on Agro tours technical and scientific education can be the motivating factor, and farmers from other areas comprise the majority of the participants in these tours. “Diversity of crops and the high-tech aspect of farming on the Central Coast are what draw people to the Agra tours.

One interesting idea proposed was for a culinary tour program. Farms and ranches would have culinary visitor centers for tourists, where they could taste various foods and get some background on what they were eating. These culinary tours would tie into restaurants promoting that their food was fresh and homegrown.

Participation on a Steering Committee or Action Task Forces of a Regional Collaborative for Central Coast Tourism

All respondents expressed a willingness to participate in a regional initiative involving a Steering Committee or Task Forces. The one who demurred was the sole proprietor of a small inn, engaged on several boards, who simply did not have the time to devote currently. There appears to be sufficient support for a regional initiative, although the limited support confirmed by this study must be expanded.

The Central California Tourism Council must be engaged in this collaborative, perhaps as facilitator, for it to have true credibility and for it to avoid duplication of effort.

RECOMMENDATIONS FOR TOURISM

The development of a regional initiative for the Tourism Industry cluster should begin with the recruitment and formation of a Steering Committee. The Committee should consist of representatives from the California Travel Association, the Central California Tourism Council, Tourism and Convention Bureau Organizations throughout the region. Representation from other sectors should comprise the action task forces instead of the Steering Committee, to prevent the Steering Committee from becoming cumbersome.

The Steering Committee should define its mission, its strategies and its goals. It should also determine whether supporting research is required and what funding it should pursue to support its initiatives.

The Steering Committee will determine what Task Forces are necessary to implement its objectives, identifying potential members of these Task Forces and assisting to recruit their members. One or two members of the Steering Committee should participate on each Task Force. These Steering Committee members will then be able to report the progress of their various Task Forces at Steering Committee meetings, which probably will occur quarterly and be face to face.

The Steering Committee will work closely with its facilitator to develop a distribution list of key stakeholders and a system for electronic distribution of information about the issues that it is addressing and the actions and decisions that it has taken. This same broadcast email process will include detailed information about the action plans and progress of the task forces. The use of internet communication should be interactive, where through the mechanism of a Blog or other interactive mechanism; stakeholders can communicate with the Steering Committee and the Task Forces

Based on the results of this research a few of the possible task forces are:

Educational and Technical–Hospitality industry with representation from both campuses of Cal State and from Cal Poly, Community Colleges, as well as representation from the Workforce Investment Boards in the region.

Interface Agriculture and Tourism – Wine Associations, large agriculturists and tourism professionals throughout the region.

Political – Local and State elected officials or their representatives, tourism professionals, representatives of the Hospitality Industry in the region.

Coordination regional marketing concepts and regional promotion – California Travel Association, Central California, Central California Tourism Council, representatives from tourism professionals throughout the region, representatives of the Hospitality Industry, and ad hoc marketing and marketing communications professionals

These Task Forces should initially develop detailed work plans with actions, responsibilities and time for completion included. They will probably meet monthly. Because of the distances that comprise the region, most of these meetings can be held by teleconferencing or videoconferencing.

The Steering Committee may choose other task forces or not include those recommended above. Each Task Force should develop a detailed action plan with assigned tasks, accountability and completion dates. Each should ultimately be accountable to the Steering Committee.

Funding should be sought to enable the Task Forces to add ad hoc experts in the fields that require solutions to the issues that they are addressing.

APPENDIX A: LIST OF STAKEHOLDERS AND EMPLOYERS THAT PARTICIPATED IN WORKSHOPS AND EXECUTIVE INTERVIEWS

Stakeholders & Employers Who Participated in the Central Coast Green Initiative

<u>Name</u>	<u>Firm / Organization</u>
Bill Camarillo	Agromin
Angie Hacker	emPowerSBC
Anna Carney Melcher	iCel LA North
Barbara Cox	California LMCC/IBEW-NECA
Becky Gray	San Luis Obispo Vitners Association
Bill Bartels	Green Source
Bill Buratto	VCEDA/GCiZ
Bill Sigler	Sigler Construction Services
Brett Sechrest	Ojai Energy Systems
Brian Larkowski	Santa Barbara Contractor's Association
Byron Ward	Action Human Technologies
Carl Wesley	Wesley Thomas
Carolyn Casavan	West Coast Environmental
Carrie Theis	HOFSA House
Casey Beyer	John Laing Homes
Casey Houweling	Houweling's Hothouse
Chad Lindholm	General Manager, Western Region
Chad Worth	Research and Development
Charles Vinick	Ecomerit
Cheryl Cuming	SLO County Tourism Business Improvement Dist.
Cheryl Moore	WIB of Ventura County
Chris Darway	Darway Farms
Christine Rogers	Core Values Consulting
Dana Merrill	Mesa Vineyard Management
Dao Minh Doan	Mainstreet Architects + Planners, Inc.
Dave Auston	Institute for Energy Efficiency
Dave Staples	Staples Construction
Dawn Dyer	Dyer Sheehan Group
Dennis Dunn	Pentair Water Pool and Spa, Inc.
Donald Rodriguez	California State University Channel Islands
Doug Nelson	Mainstreet Architects + Planners, Inc.
Ellen Brokaw	Brokaw Nurseries
Eric Freidson	Exaktime
Eric Veium	Research and Development
Evan Oakes	AG Adventure Tours
Fred Dean	iCel LA North

<u>Name</u>	<u>Firm / Organization</u>
Gary Semolich	Southern California Builders
Harold Edwards	Limoneira
Harold Wolgamott	City of Gonzales
Henry Gonzales	County of Ventura
Hilda Zacarias	City of Santa Maria
Isabell Christensen	REC Solar
Jaime Casillas	Ventura County Community College District
Janet Gagnon	SolarWorld
Janet Sederquest	Visit Oxnard
Jeff Palmer	Sespe Consulting
Jim Dunning	California Central Coast Research Partnership
Jim Winsayer	Continental Wind Power
Jim Brabeck	Farm Supply Company
Jim Fiolek	Santa Barbara Vintners Association
Jim Lauttjohann	Ventura Visitors and Convention Bureau
Joe Piedimonte	Ausonio, Inc.
Joey Briglio	City of Ventura
John Krist	Farm Bureau of Ventura County
John Kulwicz	Kulwicz Anderson Architects
Julian Gresser	Manatt, Phelps & Philips LLP
Karen Dwyer	Express Employment Services
Karin Perissinotto	Santa Barbara Contractor's Association
Kata Davis	Mainstreet Architects
Kathy Staples	S.B. County Energy Coalition
Kelle Pistone	Association of Water Agencies
Ken Smokoska	IBEW/NECA
Kevin Kilkelly	Solar World
Kris O'Conner	Central Coast Vineyard Team
Kristen Amyx	Goleta Chamber of Commerce
Larry Doris	Pentair Water Pool and Spa, Inc.
Loyanne Flinn de Gurerra	WIB of Monterey
Marilyn Farmer	California Central Coast Chapter of USGBC
Mary Ann Leffel	Monterey Peninsula Airport District
Matt Woods	AEE Solar/ REC Solar
Michael Lind	REC Solar
Michael Waxer	Carmel Development Company
Mike Manchak	EVC-SLO
Mike Rocke	Cool Planet Bio Fuels
Neil McMillan	Express Employment Pros
Nick Schultz	WIB of San Luis Obispo
Pat McCarthy	McCarthy Companies

<u>Name</u>	<u>Firm / Organization</u>
Pat Seminario	Mariott
Paul Moeller	AlertOne
Phil McGrath	McGrath Family Farms
Ray MacDonald	WIB of Santa Barbara
Rene Mendez	City of Gonzales
Richard Gonzales	Gonzales Ranch
Richard Mac Neil	WIB of Ventura County
Rick Bianchi	Centex Homes
RL Hartshorn	Cavitation Technologies
Robert Nicely	Carmel Building & Design
Robert Roach	Monterey County
Ron Pretlac	GreenTech Motors
Sandy Smith	Sespe Consulting
Sarah McCarthy	McCarthy Companies
Scott Tignac	Waste Management
Sharon Siegel	Representative for Congresswoman Lois Capps
Spencer Swayze	Ceres
Stacey White	mode Associates
Stacie Jacob	Paso Robles Wine Country Alliance
Steve Gaines	Bren School
Steve Gill	Gills Onions
Steve Smith	Exaktime
Steve Sutton	California Valley Solar Ranch
Steve Huber	Huber & Associates
Susan Opava	Cal Poly SLO
Ted McKibbin	Standard Pacific Homes
Tony Skinner	Tri-Counties Building and Construction Trade Council
Victor Dollar	Four Points Sheraton Ventura
William Merry	Monterey Peninsula Waste Management Dist.

APPENDIX B: SUMMARY OF EMPLOYER WORKSHOPS

From: Workforce Collaborative of California's Central Coast (WCCCC), Green Advisory Group

Part 1 - Initial Engagement Meetings, October 11th (Ventura) and October 12th (King City)

Topic: Summary of the Initial Employer Engagement Meetings for the WCCCC's Green Initiative

The WCCCC hosted the initial four employer engagement meetings to introduce and discuss the region's green initiative as part of the Regional Industry Cluster's of Opportunity grant. The meetings were held in Ventura on Monday (Oct. 11, 2010) and King City on Tuesday (Oct. 12, 2010) and each location had one meeting for the agricultural industry and one for the building and design community.

The Growth Opportunities

Although the meetings were split between agriculture and the building & design industries there were many common themes about the opportunities for growth within the region. The following opportunities were items that were identified more than once throughout the two-day process.

1. **Develop business opportunities along the agricultural supply chain:** Stakeholders discussed the agricultural services that could be expanded upstream, including food safety monitoring, renewable energy and water management as well as the downstream opportunities including food processing, creating food ready to eat and packaging.
2. **Increase adoption of water distribution and treatment technologies:** Stakeholders identified different water treatment and distribution technologies that reduce energy and water loss and have an opportunity to grow considerably in the region.
3. **Promote, expand and connect sustainable tourism in the region:** Stakeholders communicated the importance of connecting several of the region's unique green resources to the tourism industry, including; agricultural tourism, sustainable wineries, green transportation systems, and sustainable destinations.
4. **Communicate and educate Green building resources and best practices (Step Up 2 Green) including emphasis on new opportunities with retrofitting buildings:** Stakeholders communicated the need to identify and communicate the resources and opportunities associated with green building in the region. This opportunity is also about promoting and adopting best practices for building that are incentive based and not required by legislative mandates.
5. **Develop business opportunities for green waste processors and alternative fuels development:** Stakeholders discussed new and emerging opportunities in green waste processing and alternative fuels.
6. **Support development of pre-fabricated homes in the region and for export:** Stakeholders identified the growing opportunities associated with green pre-fabricated homes.

The Regional Requirements

Requirements to meet these different growth opportunities typically fell into several general categories. Under each of the categories there are specific examples that were identified by more than one stakeholder as a requirement for the region's green growth opportunities.

1. Infrastructure and/or Policy
 - Develop the regional water treatment and distribution systems
 - Reform to CEQA, CEC requirements and the building permitting process
 - Electric car charging stations and other infrastructure for clean transportation
 - California green building codes
 - Local hiring requirements (PLA's)
2. Education & Communication
 - Develop college level courses for high technology agriculture (e.g. UC Davis)
 - High School education programs in green building and design
3. Research & Information
 - Create a comprehensive mapping of Agriculture's supply chain for the region
 - Develop and update a database and GIS map of central coast sustainable tourism resources.
 - Develop an economic impact assessment of future water and energy costs for the agricultural industry under different scenarios.
4. Collaboration & Connectivity
 - Have the agriculture commissioners of the four counties work together to support regional entrepreneurship in agriculture
 - Improving connectivity between educational institutions and industry
5. Connecting to Potential Customers
 - The Port and opportunities to green the port
 - The military and opportunities to develop green products and services
 - Greening Schools in the region
 - Agriculture to the renewable energy industry & green modernization

Part 2 - Secondary Engagement Meetings, January 12 (Santa Barbara and Ventura)

Topic: Summary of the Second Phase Employer Engagement Meetings for the WCCCC's Green Initiative

The WCCCC hosted a second phase of two employer engagement meetings to discuss the region's green initiative as part of the Regional Industry Cluster's of Opportunity grant. The meetings were held in Santa Barbara on Wednesday (January 13, 2011) in the morning and in Ventura on the same day (January 13, 2011) later in the afternoon. Unlike the initial set of employer engagement meetings that were based on specific industries, these meetings were county wide meetings that included employers and key stakeholders from agriculture, tourism, green energy and building and design.

Employers provided feedback on five key questions. The questions and some of the responses are included on the following page.

1. Where are the opportunities for regional growth?

- A. Examine green manufacturing opportunities in Northern Santa Barbara.
- B. Create a greener more sustainable agriculture model in Santa Barbara and connect it with tourism to bring more people into the region.
- C. Build of the research infrastructure of regional institutions (UCSB, Cal Poly SLO) and implement new energy efficiency technologies within the region.
- D. Expand international market for tourism and connect it with wineries and regional transportation.
- E. Expand water filtration and energy efficiency demonstration projects within the region and look to develop new cost-effective models.
- F. Finding new ways of storing energy cost effectively.

2. What are the requirements for this growth?

- A. Inventory of assets and increased collaboration between research and entrepreneurs.
- B. Collaboration between varied tourism and winery marketing efforts.
- C. Communicate with military bases to identify opportunities to develop regional green products that can be used and purchased by the military.

3. What are the resources needed and where are they?

- A. A complete inventory of assets in science, research and academia for green energy
- B. A supply chain detailing the agricultural and tourism assets in the region.

4. Who needs to be involved in this process?

- A. Yvon Chouinard, Patagonia
- B. Farm Bureau and Vineyard Associations
- C. Regional military purchasers

APPENDIX C: TOPLINE RESULTS FROM SURVEY



W4C - RICOG
Employers (n=228)
May 2011
Toplines

Agriculture / Tourism / Energy Employer Survey

.....

Introduction:

Hello, my name is _____. May I please speak to someone involved with planning or staffing at [organization]?

[IF NEITHER A PLANNER OR SOMEONE WITH STAFFING IS AVAILABLE] Can I speak to a decision maker at your location?

Hello, my name is _____ and I'm calling on behalf of the _____ (Ventura/Santa Barbara/San Luis Obispo/Monterey) **workforce investment board and the regional partnership with the Workforce Collaborative of the Central Coast**, who would value your participation in a brief survey about the region's workforce.

(If needed): The survey should take approximately ten minutes of your time. By answering this survey, you can help the regional workforce investment system develop the appropriate type of training that will prepare the employees you will be looking for in the future.

(If needed): This survey has been commissioned by the Workforce Collaborative of California's Central Coast, which is committed to developing the regional workforce. The survey is being conducted by BW Research, an independent research organization.

(If needed): Your individual responses will **not** be published; only aggregate information will be used in the reporting of the survey results.

.....

PLEASE NOTE TRADITIONAL ROUNDING RULES APPLIED

NOT ALL PERCENTAGES WILL EQUAL EXACTLY 100%

I'd like to begin by asking you a few general questions about your location in the Central Coast, from Monterey County to Ventura County. Please answer for your current physical location and not your corporate headquarters or any other locations.

A. In what county are you located?

21%	Monterey
34%	San Luis Obispo
25%	Santa Barbara
20%	Ventura
0%	Other [Terminate]
0%	(DON'T READ) Refused [Terminate]

B. Which of the three general industries, agriculture, tourism or energy is closest in describing the type of work your business is focused on? (ALLOW MULTIPLE RESPONSES)

33%	Agriculture
51%	Tourism
20%	Energy
0%	None [TERMINATE]

SECTION 1 – Organizational Growth Assessment

1. Including all full-time and part-time employees, how many **permanent and temporary** employees work at your location? (Do not accept 0 as a response for Q1)

<u>Total permanent employees</u>	<u>Mean</u>	<u>Median</u>
5,861	26.40	11.00

Breakdown:

24%	5 or less employees
25%	6 to 10 employees
26%	11 to 24 employees
14%	25 to 49 employees
3%	50 to 99 employees
4%	100 to 249 employees
2%	250 to 499 employees
3%	DK/NA

2. If you currently have [TAKE Q1 #] full-time and part-time **permanent and temporary** employees at your location, how many more or less employees do you expect to have at your location 12 months from now?

26% More
 7% Less
 65% Same number of employees
 2% Don't know/ Refused

Expected Employment in 12 months

(Calculated by only examining employers with both current and projected data)

	<u>Current</u>	<u>12 months</u>
n	220	220
Mean	24.44	25.05
Median	10.50	11.00
Total Employees	5376	5511
New Employees		135
% Growth		2.5%

[If amount differs by 10% or more in either direction, ask:]

Just to confirm, you currently have ____ employees and you expect to have ____
 (more/less) employees, for a total of ____ employees 12 months from now.

Let me ask the same question again, but instead of 12 months out, please think about 24 months from now.

3. If you currently have [TAKE Q1 #] full-time and part-time **permanent and temporary** employees at your location, how many more or less employees do you expect to have at your location 24 months from now?

31% More
 6% Less
 59% Same number of employees
 4% Don't know/ Refused

Expected Employment in 24 months**(Calculated by only examining employers with both current and projected data)**

	<u>Current</u>	<u>24 months</u>
n	216	216
Mean	25.84	27.21
Median	11.00	12.00
Total Employees	5581	5878
New Employees		297
% Growth		5.3%

[If amount differs by 10% or more in either direction, ask:]

Just to confirm, you currently have _____ employees and you expect to have _____
(more/less) employees, for a total of _____ employees 24 months from now.**SECTION 2 – Industry and Technology profile**

4. What industry or industries best describe the work your firm is most connected to? (DO NOT READ, ALLOW MORE THAN ONE RESPONSE)

27%	Accommodations and hotels/ motels
20%	Agriculture
17%	Tourism
15%	Wineries
8%	Construction
5%	Entertainment or recreation
4%	Professional and technical services
4%	Solar and/ or photovoltaic industry
3%	Utility or energy
2%	Non-profit organization
2%	Retail sales
1%	Smart grid and/ or energy efficiency
1%	Transportation and/ or logistics
1%	Wind power
1%	Restaurants, catering, and other food services
1%	Manufacturing - high technology
2%	Other

Next, I would like to ask about the role of technology at [FIRM NAME].

5. Is your firm focused on developing or supporting the development of new technology or is the technology you are using largely established or are you involved with both?

- 5% Technology is being developed
- 54% Technology is largely established
- 37% Both, we use both emerging and established technologies
- 4% Neither

[IF Q5=1 OR 3 ASK Q6 OTHERWISE SKIP]

6. Please identify the areas of technology that are most important to your firm.(DO NOT READ, ALLOW MORE THAN ONE RESPONSE)

- 32% Information technology
- 21% Agricultural research
- 19% Smart grid and/ or energy efficiency
- 13% Communications
- 10% Solar and/ or photovoltaic industry
- 3% Biofuels and biomaterials
- 15% Other
- 9% DK/NA

SECTION 3 – General Hiring Challenges & Assessment

Now, I would like to ask about your organization's need for new employees.

7. When a non entry-level position becomes available in your firm, do you more often promote from within, hire from outside the company, or is it an even split between the two?

25% Promote from within
 46% Even split (50-50 promote & outside)
 25% Recruit from outside
 4% DK/NA

8. How often does your business recruit individuals from outside the Central Coast?

3% Always (75% to 100% of the time)
 7% Frequently (50% to 74% of the time)
 16% Sometimes (49% to 25% of the time)
 36% Rarely (1% to 24% of the time)
 36% Never (0% of the time)
 2% DK/NA

9. Now, I'm going to read a list of issues facing the region's workforce in the coming years. Please tell me how much difficulty your organization faces in addressing each workforce need.

Here's the (first/next) one _____ (READ ITEM): Please tell me whether your organization has no difficulty, some difficulty, or great difficulty in dealing with this issue.

RANDOMIZE

	<u>No difficulty</u>	<u>Some difficulty</u>	<u>Great difficulty</u>	<u>(Don't Read) Don't Know</u>
A. Providing training programs so current employees are productive and stay up-to date on changing technology and industry requirements	69%	25%	3%	3%
B. Providing training opportunities so current employees are able to advance within the organization	71%	23%	3%	4%
C. Recruiting entry-level employees with appropriate training and education	52%	37%	8%	3%
D. Recruiting non-entry level employees with adequate skills and industry experience.....	45%	38%	14%	4%

Next, I would like to ask about general skills among recent hires.

10. Thinking in general about recent entry-level or mid-level hires at your organization, which general skills would you say that recent hires tend to be **most deficient** in? [DO NOT READ - ACCEPT FIRST TWO RESPONSES]

(IF NEEDED: For this question, I would just like your general perception about skill deficiencies for recent hires across all occupations at your organization)

- 14% Interpersonal communication skills
- 14% Technical competence specific to the position
- 12% Computer skills
- 10% Customer service skills
- 6% Technical writing skills
- 5% English language skills
- 5% Creative problem-solving skills
- 5% Experience
- 4% Work ethic
- 4% General reading and writing skills
- 2% Math skills
- 0.4% Ability to work with different groups or departments
- 14% Other
- 1% Depends on occupation
- 0.4% Have not hired entry or mid-level recently
- 24% DK/NA

SECTION 4 – Occupational Assessment

Occupation-Related Questions

[NOTE - PLEASE COMMUNICATE TO RESPONDENT THAT WE WILL BE USING GENERAL OCCUPATIONAL TITLES RATHER THAN SPECIFIC JOB TITLES THAT MAY BE USED WITHIN EACH ORGANIZATION]

11. Now, I'm going to ask you about specific occupations within your organization related to your business. The occupational titles we are using may differ from the specific position titles used in your organization. For these questions, I would like you to try to equate your organization's specific position titles with the more general ones we will use here.

Please only assign one occupation to each employee. If they fall into more than one category, please assign them to the occupation in which they devote more of their time.

Please tell me if your organization employs, at your location), individuals in positions matching the following general occupational titles:

Here's the (first/next) one: _____ (READ ITEM, THEN ASK): Do you have employees who fit this occupational description at your location?

(1 = Yes, 2 = No, 3 =DK/NA)

Occupational sets are determined by Screener B. If they qualify for all three occupational sets from Screener B, only ask about the five energy occupations here. If they qualify for two occupational sets from Screener B, ask about all 10 occupations at Q11, but then only ask about four total occupations in Q12-Q17. Occupations selected are based on prioritization (shown on next page). However, if they say yes to customer service positions in both industries or finance and accounting positions, only present each occupation once at Q12-Q17 (since they will be giving the total in each occupation).

Occupations – Agriculture (n=75)

	<u>Yes</u>	<u>No</u>	<u>(DON'T READ DK/NA)</u>
1. Agricultural equipment operators	48%	51%	1%
2. Supervisors and managers of field workers.....	45%	51%	4%
3. Customer service positions	41%	57%	1%
4. Animal breeders	5%	93%	1%
5. Administrative and office management positions	75%	24%	1%

Occupations – Tourism (n=116)

	<u>Yes</u>	<u>No</u>	<u>(DON'T READ DK/NA)</u>
1. Customer service positions	89%	9%	2%
2. Marketing and sales positions.....	65%	33%	3%
3. Supervisors and managers of front-line workers	77%	21%	3%
4. Computer and information technology support positions..	23%	75%	2%
5. Finance and accounting positions.....	47%	51%	3%

Occupations – Energy (n=46)

	<u>Yes</u>	<u>No</u>	<u>(DON'T READ DK/NA)</u>
1. Customer service positions	39%	59%	2%
2. Electrical equipment assemblers	24%	74%	2%
3. Sales representatives or estimators.....	61%	37%	2%
4. Quality control and testing technicians	33%	65%	2%
5. Finance and accounting positions.....	63%	33%	4%

(SELECT UP TO 4 OF THE OCCUPATIONS THAT THE RESPONDENT INDICATED ARE REPRESENTED AT THEIR LOCATION(S) IN Q11 – TO BE ASKED THE FOLLOWING OCCUPATIONAL QUESTIONS)

[NOTE: FOR DATA COLLECTION, EACH OCCUPATION SHOULD HAVE ITS OWN NUMBER AND THAT NEEDS TO BE USED FOR ENTIRE DATA COLLECTION – FOR EXAMPLE, OCCUPATION 6 SHOULD ALWAYS BE OCCUPATION 6 – RESPONSES TO Q0 FOR OCCUPATION 6 SHOULD BE FOUND UNDER Q0.6]

Next I'm going to ask you a few questions about some of the occupations you mentioned, including _____ (READ LIST OF OCCUPATIONS TO BE USED)

Priority	Occupation	Industry
1	Electrical equipment assemblers	Energy
2	Quality control and testing technicians	Energy
3	Finance and accounting positions	Energy
4	Sales representatives or estimators	Energy
5	Customer service positions	Energy
6	Animal breeders	Agriculture
7	Equipment operators	Agriculture
8	Supervisors and managers of field workers	Agriculture
9	Administrative and office management positions	Agriculture
10	Customer service positions	Agriculture
11	Computer and information technology support positions	Tourism
12	Finance and accounting positions	Tourism
13	Marketing and sales positions	Tourism
14	Supervisors and managers of front-line workers	Tourism
15	Customer service positions	Tourism

12. As I read each of the following occupations, please tell me how many individuals you have at your location that are currently employed either full-time or part-time in this occupation.

AGRICULTURE

	<u>Agricultural equipment operators</u>	<u>Supervisors and managers of field workers</u>	<u>Customer service positions</u>	<u>Animal breeders</u>	<u>Administrative and office management positions</u>
n	34	33	25	4	51
Mean	6.74	3.97	2.84	1.00	2.49
Median	4.00	2.00	2.00	1.00	2.00
Total Employees	229	131	71	4	127

TOURISM

	<u>Customer service positions</u>	<u>Marketing and sales positions</u>	<u>Supervisors and managers of front-line workers</u>	<u>Computer and information technology support positions</u>	<u>Finance and accounting positions</u>
n	84	71	84	21	48
Mean	8.04	2.55	3.60	1.57	1.69
Median	5.00	1.00	2.00	1.00	1.00
Total Employees	675	181	302	33	81

ENERGY

	<u>Customer service positions</u>	<u>Electrical equipment assemblers</u>	<u>Sales representatives or estimators</u>	<u>Quality control and testing technicians</u>	<u>Finance and accounting positions</u>
n	14	11	27	15	28
Mean	2.50	3.36	2.59	2.47	1.75
Median	2.00	3.00	2.00	2.00	1.00
Total Employees	35	37	70	37	49

[CREATE INTERNAL CONTROL SO THAT THE COMBINED OCCUPATIONAL EMPLOYMENT IS NOT MORE THAN OVERALL EMPLOYMENT Q1]

13. As I read each of the occupations again, please tell me how many more or less employees you estimate will be employed in each of the occupations 12 months from now.

[Use the following format for each one:]

If you currently have [TAKE Q12 #] [INSERT OCCUPATION TITLE] _____ at your location, how many more or less [INSERT OCCUPATION TITLE] do you expect to have at your location 12 months from now?

Agriculture

	<u>More</u>	<u>Less</u>	<u>Same</u>	<u>DK/NA</u>
1. Agricultural equipment operators (n=36)	14%	6%	78%	3%
2. Supervisors and managers of field workers (n=34)	6%	3%	85%	6%
3. Customer service positions (n=29)	14%	3%	79%	3%
4. Animal breeders (n=4)	0%	25%	75%	0%
5. Administrative and office management positions (n=55) ...	7%	4%	85%	4%

Tourism

	<u>More</u>	<u>Less</u>	<u>Same</u>	<u>DK/NA</u>
1. Customer service positions (n=88)	18%	2%	78%	1%
2. Marketing and sales positions (n=72)	11%	0%	89%	0%
3. Supervisors and managers of front-line workers (n=86)	5%	5%	91%	0%
4. Computer and information technology support positions (n=25)	8%	4%	88%	0%
5. Finance and accounting positions (n=52)	6%	2%	92%	0%

Energy

	<u>More</u>	<u>Less</u>	<u>Same</u>	<u>DK/NA</u>
1. Customer service positions (n=14)	7%	0%	93%	0%
2. Electrical equipment assemblers (n=11)	82%	0%	18%	0%
3. Sales representatives or estimators (n=28)	36%	0%	64%	0%
4. Quality control and testing technicians (n=15)	13%	0%	87%	0%
5. Finance and accounting positions (n=29)	3%	0%	97%	0%

Expected Employment in 12 months:

(Calculated by only examining firms with both current and projected data)

AGRICULTURE

	<u>Agricultural equipment operators</u>		<u>Supervisors and managers of field workers</u>		<u>Customer service positions</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	34	34	32	32	25	25
Mean	6.74	6.76	4.06	3.81	2.84	2.84
Median	4.00	3.00	2.50	2.00	2.00	2.00
Total Employees	229	230	130	122	71	71
New Employees		1		-8		0
% Growth		0.4%		-6.2%		0.0%

	<u>Animal breeders</u>		<u>Administrative and office management positions</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	4	4	50	50
Mean	1.00	.75	2.50	2.54
Median	1.00	1.00	2.00	2.00
Total Employees	4	3	125	127
New Employees		-1		2
% Growth		-25.0%		1.6%

TOURISM

	<u>Customer service positions</u>		<u>Marketing and sales positions</u>		<u>Supervisors and managers of front-line workers</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	84	84	71	71	84	84
Mean	8.04	8.35	2.55	2.66	3.60	3.58
Median	5.00	5.00	1.00	1.00	2.00	2.00
Total Employees	675	701	181	189	302	301
New Employees		26		8		-1
% Growth		3.9%		4.4%		-0.3%

	<u>Computer and information technology support positions</u>		<u>Finance and accounting positions</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	21	21	48	48
Mean	1.57	1.62	1.69	1.71
Median	1.00	1.00	1.00	1.00
Total Employees	33	34	81	82
New Employees		1		1
% Growth		3.0%		1.2%

ENERGY

	<u>Customer service positions</u>		<u>Electrical equipment assemblers</u>		<u>Sales representatives or estimators</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	14	14	11	11	27	27
Mean	2.50	2.57	3.36	4.91	2.59	2.96
Median	2.00	2.00	3.00	5.00	2.00	2.00
Total Employees	35	36	37	54	70	80
New Employees		1		17		10
% Growth		2.9%		45.9%		14.3%

	<u>Quality control and testing technicians</u>		<u>Finance and accounting positions</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	15	15	28	28
Mean	2.47	2.80	1.75	1.82
Median	2.00	2.00	1.00	1.00
Total Employees	37	42	49	51
New Employees		5		2
% Growth		13.5%		4.1%

Conservative Statistics -- Expected Employment in 12 months:

(Calculated by only examining firms with both current and projected data)

AGRICULTURE

	<u>Agricultural equipment operators⁹</u>		<u>Supervisors and managers of field workers¹⁰</u>		<u>Customer service positions</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	33	33	31	31	<i>No outliers</i>	
Mean	6.76	6.97	3.87	3.94		
Median	4.00	3.00	2.00	2.00		
Total Employees	223	230	120	122		
New Employees		7		2		
% Growth		3.1%		1.7%		

	<u>Animal breeders¹¹</u>		<u>Administrative and office management positions</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	3	3	<i>No outliers</i>	
Mean	1.00	1.00		
Median	1.00	1.00		
Total Employees	3	3		
New Employees		0		
% Growth		0.0%		

⁹ One firm removed expecting 100% negative growth for this occupation.¹⁰ One firm removed expecting 100% negative growth for this occupation.¹¹ Only one firm reporting adding or losing employees, other three firms reporting flat growth

TOURISM

	<u>Customer service positions</u> ¹²		<u>Marketing and sales positions</u>		<u>Supervisors and managers of front-line workers</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	83	83	No outliers		No outliers	
Mean	8.04	8.23				
Median	5.00	5.00				
Total Employees	667	683				
New Employees		16				
% Growth		2.4%				
	<u>Computer and information technology support positions</u>		<u>Finance and accounting positions</u>			
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>		
n	No outliers		No outliers			
Mean						
Median						
Total Employees						
New Employees						
% Growth						

¹² One firm removed expecting 125% growth for this occupation.

ENERGY

	<u>Customer service positions</u>		<u>Electrical equipment assemblers¹³</u>		<u>Sales representatives or estimators</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	No outliers		8	8	No outliers	
Mean			3.50	4.75		
Median			3.50	5.50		
Total Employees			28	38		
New Employees				10		
% Growth				35.7%		

	<u>Quality control and testing technicians</u>		<u>Finance and accounting positions</u>	
	<u>Current</u>	<u>12 months</u>	<u>Current</u>	<u>12 months</u>
n	No outliers		No outliers	
Mean				
Median				
Total Employees				
New Employees				
% Growth				

[If amount differs by 10% or more in either direction, ask:]

Just to confirm, you currently have ____ (insert occupation title) and you expect to have ____ (more/less), for a total of ____ (insert occupation title) 12 months from now.

¹³ Three firms removed reporting highest growth

14. For the same list of occupations, I'm interested in the level of difficulty your organization has in finding applicants who meet the organization's hiring standards. As I read each occupation, please tell me whether your location has no difficulty, some difficulty or great difficulty finding qualified applicants. (PRESENT IN ORDER THEY WERE PREVIOUSLY PRESENTED)

Agriculture

	<u>No difficulty</u>	<u>Some difficulty</u>	<u>Great difficulty</u>	<u>DK/NA</u>
1. Agricultural equipment operators (n=36)	53%	36%	6%	6%
2. Supervisors and managers of field workers (n=34)	65%	24%	6%	6%
3. Customer service positions (n=29)	52%	38%	3%	7%
4. Animal breeders (n=4)	75%	25%	0%	0%
5. Administrative and office management positions (n=55) ..	53%	38%	2%	7%

Tourism

	<u>No difficulty</u>	<u>Some difficulty</u>	<u>Great difficulty</u>	<u>DK/NA</u>
1. Customer service positions (n=88)	58%	32%	8%	2%
2. Marketing and sales positions (n=72)	49%	39%	10%	3%
3. Supervisors and managers of front-line workers (n=86) ...	43%	45%	10%	1%
4. Computer and information technology support positions (n=25)	52%	32%	12%	4%
5. Finance and accounting positions (n=52)	58%	29%	13%	0%

Energy

	<u>No difficulty</u>	<u>Some difficulty</u>	<u>Great difficulty</u>	<u>DK/NA</u>
1. Customer service positions (n=14)	57%	36%	7%	0%
2. Electrical equipment assemblers (n=11)	18%	45%	36%	0%
3. Sales representatives or estimators (n=28)	29%	46%	25%	0%
4. Quality control and testing technicians (n=15)	33%	33%	33%	0%
5. Finance and accounting positions (n=29)	59%	38%	3%	0%

15. Now, for the same list of occupations, I'd like to know the **typical** education requirements for successful applicants within each occupation. The categories are (READ OPTIONS). As I read each occupation, please indicate the typical education requirement for that occupation.

- 1 Completion of high school or equivalent
- 2 Certificate from an accredited college
- 3 Associate's Degree from accredited college
- 4 Bachelor's Degree (B.A., B.S.)
- 5 Master's or other graduate degree (M.A., M.S., MPA, MBA, Ph.D., J.D.)
- 6 (DON'T READ) DK/NA

AGRICULTURE

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>DK/NA</u>
1. Agricultural equipment operators (n=36)	67%	0%	0%	11%	0%	22%
2. Supervisors and managers of field workers (n=34)	50%	6%	12%	12%	0%	21%
3. Customer service positions (n=29)	38%	10%	10%	31%	0%	10%
4. Animal breeders (n=4)	0%	0%	0%	0%	75%	25%
5. Administrative and office management positions (n=55)	24%	18%	15%	33%	0%	11%

TOURISM

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>DK/NA</u>
1. Customer service positions (n=88)	82%	2%	8%	2%	0%	6%
2. Marketing and sales positions (n=72)	33%	7%	24%	29%	1%	6%
3. Supervisors and managers of front-line workers (n=86)	34%	12%	20%	30%	1%	3%
4. Computer and information technology support positions (n=25)	16%	20%	16%	40%	0%	8%
5. Finance and accounting positions (n=52)	29%	12%	13%	37%	6%	4%

ENERGY

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>DK/NA</u>
1. Customer service positions (n=14)	64%	0%	7%	21%	7%	0%
2. Electrical equipment assemblers (n=11)	64%	36%	0%	0%	0%	0%
3. Sales representatives or estimators (n=28)	36%	7%	11%	46%	0%	0%
4. Quality control and testing technicians (n=15)	33%	27%	7%	27%	7%	0%
5. Finance and accounting positions (n=29)	10%	14%	41%	34%	0%	0%

16. I'm going to read a list of general skills. Please tell me which two of these are most important when considering applicants for _____ (INSERT OCCUPATION)? (READ OPTIONS)

AGRICULTURE

Agricultural equipment operators (n=36)

- 58% Skills to till soil and to plant, cultivate, and harvest
- 58% Willingness to work flexible work schedule
- 42% Ability to speak a second language
- 11% Skills to perform post-harvest tasks, such as husking, shelling, threshing, and ginning
- 8% Ability to perform tasks, such as crop baling or hay bucking
- 6% DK/NA

Supervisors and managers of field workers (n=34)

- 59% People management skills
- 47% Knowledge of applying pesticides, herbicides, and fertilizers
- 32% Knowledge of growing and harvesting grains, fruits, vegetables, and other crops
- 29% Knowledge of planting and harvesting crops, installing irrigation, or delivering animals
- 6% Ability to care for live farm, ranch, or water animals
- 6% Ability to speak a second language
- 3% DK/NA

Customer service positions (n=29)

- 83% Ability to effectively interact and communicate with customers
- 62% Computer literate with ability to enter, access, and retrieve data
- 17% Understanding of the local and regional agriculture industry
- 10% Ability to speak a second language
- 3% Ability to explain technical material over the phone
- 10% DK/NA

Animal breeders (n=4)

- 50% Knowledge of artificial insemination
- 50% Skills to identify and produce specific desired traits and characteristics
- 50% Knowledge of genetics and animal science
- 25% Skills to keep detailed records and use spreadsheets

Administrative and office management positions (n=55)

- 71% Ability to keep financial and inventory records
- 55% Ability to manage the day-to-day activities of one or more agricultural establishments
- 13% Skills to determine the best time to plant seed, apply fertilizer and chemicals, and harvest and market crops
- 11% Knowledge of futures market and contracts on future delivery of agricultural goods
- 4% Ability to plan the combination of crops to grow to stabilize returns despite unpredictable markets
- 11% DK/NA

TOURISM***Customer service positions (n=88)***

- 91% Ability to effectively interact and communicate with customers
- 57% Computer literate with ability to enter, access, and retrieve data
- 38% Willingness to work flexible work schedule
- 6% Ability to speak a second language
- 2% Ability to explain technical material over the phone
- 1% DK/NA

Marketing and sales positions (n=72)

- 53% Ability to communicate persuasively
- 51% Ability to forge and maintain relationships with clients
- 51% Knowledge of local and regional activities and tourism-related resources
- 21% Ability to communicate effectively in writing
- 14% Ability to monitor customer reaction and assess the need for new products and services
- 3% DK/NA

Supervisors and managers of front-line workers (n=86)

- 57% Ability to answer customers' inquiries and deal with complaints
- 57% Ability to provide day-to-day oversight of a team
- 52% Ability to effectively interview, hire, and train employees
- 10% Skills to develop merchandising techniques and coordinate sales promotions
- 8% Ability to ethically and accurately handle large amounts of cash
- 6% DK/NA

Computer and information technology support positions (n=25)

- 72% Knowledge of industry software
- 44% Skills to troubleshoot and fix POS terminals
- 24% Ability to communicate technical information to non-technical personnel
- 20% Willingness to work flexible work schedule
- 16% Ability to identify inferior computing processes and technology
- 8% DK/NA

Finance and accounting positions (n=52)

- 46% Ability to prepare financial statements and reports
- 40% Ability to analyze and interpret budgets and data
- 37% Computer literate with ability to enter, access, and retrieve data
- 33% Ability to effectively use spreadsheet software
- 27% Ability to plan, set up, and administer accounting systems
- 6% DK/NA

ENERGY

Customer service positions (n=14)

- 79% Ability to effectively interact and communicate with customers
- 43% Computer literate with ability to enter, access, and retrieve data
- 36% Understanding of the local and regional energy industry
- 21% Ability to assess the validity of, and resolve complaints
- 21% Ability to explain technical material over the phone

Electrical equipment assemblers (n=11)

- 64% Skills to monitor gauges, dials, and other indicators making sure machinery is working properly
- 55% Ability to use handheld tools effectively
- 45% Ability to read and understand technical manuals
- 27% Understanding of applied principles in electronics
- 9% Computer literate with ability to enter, access, and retrieve data

Sales representatives or estimators (n=28)

- 64% Ability to forge and maintain relationships with clients
- 43% Ability to communicate persuasively
- 36% Skills to collect and analyze data on all of the factors that can affect costs (materials, labor, location, etc.)
- 25% Ability to monitor customer reaction and assess the need for new products and services
- 18% Skills to accurately forecast the cost, size, and duration of future products and services
- 7% DK/NA

Quality control and testing technicians (n=15)

- 60% Skills to use measuring and diagnostic devices to adjust, test, and repair equipment
- 53% Knowledge of electrical and electronic circuits
- 47% Ability to record and analyze data
- 20% Ability to inspect processes
- 13% Knowledge of the principles and theories of science, engineering, and mathematics
- 7% DK/NA

Finance and accounting positions (n=29)

- 59% Ability to effectively use spreadsheet software
- 52% Ability to plan, set up, and administer accounting systems
- 45% Ability to prepare financial statements and reports
- 38% Ability to analyze and interpret budgets and data
- 3% DK/NA

17. I'm going to read the same list of general skills once more. Please tell me which of these skills your _____ (READ OCCUPATION) are currently **most deficient** in?

AGRICULTURE

Agricultural equipment operators (n=36)

- 47% Ability to speak a second language
- 14% Skills to till soil and to plant, cultivate, and harvest
- 14% Ability to perform tasks, such as crop baling or hay bucking
- 8% Skills to perform post-harvest tasks, such as husking, shelling, threshing, and ginning
- 8% Willingness to work flexible work schedule
- 22% DK/NA

Supervisors and managers of field workers (n=34)

- 35% People management skills
- 15% Knowledge of planting and harvesting crops, installing irrigation, or delivering animals
- 12% Knowledge of growing and harvesting grains, fruits, vegetables, and other crops
- 12% Ability to care for live farm, ranch, or water animals
- 9% Knowledge of applying pesticides, herbicides, and fertilizers
- 3% Ability to speak a second language
- 29% DK/NA

Customer service positions (n=29)

- 34% Ability to speak a second language
- 17% Ability to explain technical material over the phone
- 17% Understanding of the local and regional agriculture industry
- 14% Ability to effectively interact and communicate with customers
- 3% Computer literate with ability to enter, access, and retrieve data
- 28% DK/NA

Animal breeders (n=4)

- 50% Knowledge of artificial insemination
- 25% Skills to use artificial insemination techniques and equipment
- 25% Skills to identify and produce specific desired traits and characteristics
- 25% Skills to keep detailed records and use spreadsheets

Administrative and office management positions (n=55)

- 24% Knowledge of futures market and contracts on future delivery of agricultural goods
- 22% Ability to keep financial and inventory records
- 16% Skills to determine the best time to plant seed, apply fertilizer and chemicals, and harvest and market crops
- 16% Ability to plan the combination of crops to grow to stabilize returns despite unpredictable markets
- 11% Ability to manage the day-to-day activities of one or more agricultural establishments
- 31% DK/NA

TOURISM

Customer service positions (n=88)

- 44% Ability to speak a second language
- 23% Willingness to work flexible work schedule
- 18% Ability to effectively interact and communicate with customers
- 18% Computer literate with ability to enter, access, and retrieve data
- 18% Ability to explain technical material over the phone
- 11% DK/NA

Marketing and sales positions (n=72)

- 38% Ability to monitor customer reaction and assess the need for new products and services
- 24% Ability to communicate persuasively
- 24% Ability to communicate effectively in writing
- 18% Ability to forge and maintain relationships with clients
- 13% Knowledge of local and regional activities and tourism-related resources
- 13% DK/NA

Supervisors and managers of front-line workers (n=86)

- 42% Skills to develop merchandising techniques and coordinate sales promotions
- 22% Ability to answer customers' inquiries and deal with complaints
- 17% Ability to effectively interview, hire, and train employees
- 15% Ability to provide day-to-day oversight of a team
- 6% Ability to ethically and accurately handle large amounts of cash
- 19% DK/NA

Computer and information technology support positions (n=25)

- 32% Ability to communicate technical information to non-technical personnel
- 20% Skills to troubleshoot and fix POS terminals
- 16% Ability to identify inferior computing processes and technology
- 12% Knowledge of industry software
- 8% Willingness to work flexible work schedule
- 28% DK/NA

Finance and accounting positions (n=52)

- 31% Ability to plan, set up, and administer accounting systems
- 19% Ability to prepare financial statements and reports
- 17% Ability to analyze and interpret budgets and data
- 17% Computer literate with ability to enter, access, and retrieve data
- 13% Ability to effectively use spreadsheet software
- 25% DK/NA

ENERGY***Customer service positions (n=14)***

- 50% Computer literate with ability to enter, access, and retrieve data
- 21% Ability to effectively interact and communicate with customers
- 21% Understanding of the local and regional energy industry
- 7% Ability to assess the validity of, and resolve complaints
- 7% Ability to explain technical material over the phone
- 21% DK/NA

Electrical equipment assemblers (n=11)

- 73% Computer literate with ability to enter, access, and retrieve data
- 27% Understanding of applied principles in electronics
- 9% Ability to read and understand technical manuals

Sales representatives or estimators (n=28)

- 50% Skills to collect and analyze data on all of the factors that can affect costs (materials, labor, location, etc.)
- 18% Ability to monitor customer reaction and assess the need for new products and services
- 14% Ability to communicate persuasively
- 14% Ability to forge and maintain relationships with clients
- 14% Skills to accurately forecast the cost, size, and duration of future products and services
- 14% DK/NA

Quality control and testing technicians (n=15)

- 33% Ability to record and analyze data
- 27% Knowledge of the principles and theories of science, engineering, and mathematics
- 13% Knowledge of electrical and electronic circuits
- 7% Ability to inspect processes
- 7% Skills to use measuring and diagnostic devices to adjust, test, and repair equipment
- 20% DK/NA

Finance and accounting positions (n=29)

- 59% Has a Certified Public Accountant (CPA) certification
- 14% Ability to analyze and interpret budgets and data
- 14% Ability to effectively use spreadsheet software
- 14% Ability to prepare financial statements and reports
- 7% Ability to plan, set up, and administer accounting systems
- 14% DK/NA

SECTION 5 – GREEN Profile

Lastly, I would like to ask about green or clean businesses in the Central Coast which can be defined as those with products or services that use less energy and/or natural resources than comparable products or services, reduce or mitigate pollution, or reduce the amount of greenhouse gases that are released

18. Does your firm produce or manufacture green products or are you in the process of developing green products?

((IF NEEDED: Green products are those products that use less energy and/or natural resources than comparable products, reduce or mitigate pollution, or reduce the amount of greenhouse gases that are released))

(n=228)

- 18% Yes
- 79% No our firm is not involved in developing, producing, or manufacturing green products
- 3% DK/NA

19. Does your firm provide green services or are you in the process of developing green services?

(n=228)

- 46% Yes
- 51% No our firm is not involved in developing or providing green services
- 3% DK/NA

20. Does your firm support the development of green products or services OR provide research and/or technology for green products or services?

(n=228)

- 57% Yes
- 40% No our firm is not involved in supporting the development of green products/ services OR research/ technology for them
- 3% DK/NA

Before we finish, I'd like to ask you a general question and verify your contact information.

21. The Workforce Collaborative of California's Central Coast, a collection of the four workforce investment boards from Monterey, San Luis Obispo, Santa Barbara and Ventura Counties is examining new opportunities and strategies to support employers in the Central Coast's, agriculture, tourism and energy industries. Would you be interested in learning more about this effort and providing more detailed information on how they may be able to assist employers like yourself?

(n=228)

- 29% Yes
- 18% Possibly
- 51% No
- 3% DK/NA

Thank you for completing the survey. Since it sometimes becomes necessary for the project manager to call back and confirm responses to certain questions, I would like to verify your contact information.

- A. First and Last Name of Respondent _____
- B. Position of Respondent _____
- C. Phone of Respondent _____
- D. Email of Respondent _____
- E. Name of Company _____
- F. Company Address (including City) _____

**Those are all the questions I have.
Thank you very much for your time.**

G. Date of Interview _____

H. Time of Interview _____

I. Name of Interviewer _____

J. County _____

Survey Type:

86% Phone

14% Web

APPENDIX D: METHODOLOGY FOR REGIONAL EMPLOYER SURVEY

The table below provides a brief overview of the methodology utilized for the employer survey component of this project.

Table 6 Overview of Survey Methodology

Method	An online and telephone survey of Central Coast employers who identified as at least one of the following industries; agriculture, tourism or energy.
Number of Participants	228 Central Coast employers from either Monterey, San Luis Obispo, Santa Barbara, or Ventura counties completed the survey either online (n=32) or over the phone (n=198)
Field Dates for Primary Research	Online and phone surveys were completed from April 18 to May 13, 2011
Survey Universe	1,194 Central Coast firms (Monterey, San Luis Obispo, Santa Barbara or Ventura Counties) that were self-identified as a green firm or were classified in agriculture, energy, or tourism

PRIMARY RESEARCH

Employers were able to complete the survey either online or were called to complete the survey over the phone. The online and telephone survey were developed to provide a universal data set.

Survey Design

Through an iterative process, BW Research worked closely with the project team to develop survey instruments that met the ongoing research objectives of the study. In developing the survey instruments, BW Research utilized techniques to overcome known biases in survey research and minimize potential sources of measurement error within the survey.

Given the broad scope of some of the NAICS codes used to define energy, agriculture, and tourism, a screener question was utilized for that asked employers which of the three general industries they felt connected to energy, agriculture, tourism, or a combination of the three

Sampling Method

Employers were delineated by county and general industry (energy, agriculture, and tourism) and a sampling quota was established for each strata. This stratified and random sampling method allows us to account for different levels of cooperation between different types of employers from different areas while maintaining a representative sampling.

Data Collection

Prior to beginning data collection, BW Research conducted interviewer training and also pre-tested the survey instrument, both online and over the phone, to ensure that all the words and questions were easily understood by respondents. Telephone interviews were generally conducted from 9:00 am to 4:30 pm Monday through Friday. The data collection period was April 18 through May 13, 2011.

A Note about Margin of Error

The overall margin of error for the survey, at the 95 percent level of confidence, is between +/- 3.50 percent and +/- 5.84 percent (depending on the distribution of each question) for questions answered by all 228 respondents.

APPENDIX E - 1: EXECUTIVE INTERVIEW GUIDE & NOTES: GREEN INDUSTRY

(The Interviewer will have researched the companies to be interviewed and determine whether they are a manufacturer of green products or provider of green technologies, or whether they are a “model” implementer of green technology)

The State of California has instituted a regional initiative in ten regions throughout the State, based on the identification of Regional Industry Clusters of Opportunity and the establishment of regional initiatives for the economic and workforce development of these clusters. Under the auspices of the California Workforce Group, the Workforce Collaborative of the California Central Coast is sponsoring a study of several industry clusters in the region.

After examining data on the Central Coast economy, reviewing economic development efforts in each of the region's county's and listening to employers in the green initiative workshops, three broad industry clusters have been identified that represent the best opportunity for economic and workforce development in the Central Coast. Green Manufacturing and Energy Providers has been identified as one of these.

We are conducting individual executive interviews in support of this study.

Can you tell me a little about your products and their applications?

In your view what are the current key factors to the success of your business (or industry)?

What occupations are critical for successfully addressing these factors?

For each occupation:

What skill or qualification is the most important?

What is the next most important?

Are there other skills or qualifications that you would like to mention that are vital for this occupation?

From your knowledge of your business for which (if any) of these occupations is it difficult to recruit qualified personnel?

Are there current training or educational needs that are not being addressed, which would make it easier to recruit qualified and skilled employees for these positions if this training or educational programs were available?

Apart from qualified personnel are there other current obstacles to the success of your business?

What are the products or technologies that offer the greatest opportunities for your business over the next five years?

To support growth in each of these areas, what occupations will be critical?

For each occupation:

What skill or qualification is the most important?

What is the next most important?

Are there other skills or qualifications that you would like to mention that are vital for this occupation?

From your knowledge of your business (industry regionally), for which (if any) of these occupations is it difficult to recruit qualified personnel?

Are there training or educational needs that are not being addressed, which will make it easier to recruit qualified and skilled employees for these positions if this training or educational programs were available?

Apart from qualified personnel are there, in your opinion, other obstacles to the development of these growth opportunities?

The collaborative project for which this research is being completed has a significant emphasis on “green” initiatives. These would include industries that utilize alternative or renewable sources of energy, industries providing alternative or renewable energy, manufacturers of products that promote conservation of resources, energy efficiency, or the means of using renewable sources of energy or businesses that have implemented green processes or procedures.

Are you currently using green technologies or procedures?

Are there any occupations that are required specifically to utilize these technologies or implement these procedures?

(If so) For each occupation:

What skill or qualification is the most important?

What is the next most important?

Are there other skills or qualifications that you would like to mention that are vital for this occupation?

From your knowledge of your business (industry regionally), for which (if any) of these occupations is it difficult to recruit qualified personnel?

Are there training or educational needs that are not being addressed, which will make it easier to recruit qualified and skilled employees for these positions if this training or educational programs were available?

Do you know of other businesses in your industry that are significantly implementing green technologies or procedures?

In order to get beyond the research stage into the planning and implementation stages, the Green Manufacturing Industry and Alternative Energy Cluster will have to establish a regional organizational mechanism, where every important stakeholder group is represented. Whatever the model, would you be willing to serve as a part of it? Who else, in your opinion should be a part of the group implementing this initiative?

GREEN INDUSTRY EXECUTIVE INTERVIEW NOTES

AEE SOLAR

MATTHEW WOODS

Products and Applications

AEE and SEL are subsidiaries of Mainstream Energy, Inc. Their operation in San Luis Obispo is a \$200,000,000 business. Primarily they design and install solar energy systems. They also manufacture racks for these installations.

Critical Factors for Current Success

Their personnel are their greatest asset, a talented and dedicated team. Incentives for installing solar energy are still a major driver of the industry. They also need the support of utilities, because their systems need to be integrated with conventional utilities.

Key Occupations for Current Success

Sales

Finance

Marketing

Human Resources

Engineering

Career Opportunities include a trained workforce with not only electrical training, but a background in solar energy. Community Colleges are a source for trained personnel.

They do not have difficulty recruiting. They can recruit experienced construction personnel, because of the slump in the construction industry.

There is an organization called Solar Tech that does much of this training. They are a lobbying group also. They are managed by Doug Paine. The web site is www.solartech.org.

The company has more difficulty recruiting at the senior management level. The local economy does not provide many opportunities for working spouses.

Obstacles to Current Success

The uncertainty of government subsidies is an obstacle.

Opportunities for Future Success

The markets for solar energy are expected to double in this year, and that growth should continue. Technological advances to increase the efficiencies of this energy source are necessary to make it sustainable without subsidies.

There are considerable economic development opportunities for the recruitment of supply chain companies to support the solar energy industry.

Critical Occupations for Future Success

The required occupations will essentially be the same, with a heavy emphasis on management level personnel, marketing, engineering and construction workers.

Obstacles to Future Success

The technology will have to keep pace with the potential demand in terms of the solar energy source being economically competitive with alternatives.

Green Technology Applications

“We outsource all of our manufacturing to global leaders such as SAPA. We of course try and limit transportation, increase domestic content and eliminate waste with our design. “

Other Companies utilizing Green Technology

Costco Wholesale, large PV system on their roof, very aggressive energy efficiency policies and procedures.

Participation in the Green Industry Initiative

“Yes but it will need to be defined at what level. We have a Director of Legislative affairs that may drive these efforts. Thank you. “

GREEN INDUSTRY EXECUTIVE INTERVIEW NOTES

AGROMIN, INC.

BILL CAMARILLO

Products and Applications

Agromin partners with waste haulers who manage organic waste streams for municipalities. They compost leaves, grass and landscaping waste to create solid products for the agricultural, landscaping and retail sectors. They conduct soil analysis for agricultural and landscaping customers so that they can do custom blending to meet their customers' requirements. Their custom blending takes into account pH, minerals and nutrients. They also produce "off the shelf" retail products.

An additional product of Agromin's is energy. They convert waste streams, such as wood waste, into biogas or liquid biofuels. Using an anaerobic "digestive system," they convert this organic waste into electricity, heat or fuel.

Processes

They take organic waste and utilize a batch system, processing the waste in the equivalent of "garages." They "percolate" it in enzymes (bacteria) for three weeks. One of the usable by-products of the process is reusable methane gas. At the end of the process the outcome is material called "digestate." Agromin composts this material with other organic materials and kills the pathogens that might be present. The product is then screened for particulate size and blended with other materials to produce Agromin's products.

Key Factors for Success

Finding good people with the experience that we need.

Critical Occupations for Current Success, Required Skills and Recruiting

Agromin requires:

Employees with four and five year business degrees

Biology and Chemistry majors with four year degrees

Agriculture and Horticulture majors with two to four year degrees

They need higher level personnel capable of researching the requirements of what their customers are trying to grow and matching these to the analysis of soil samples.

Among Blue Collar Workers Agromin requires:

Truck Drivers

Laborers involved in materials handling, packing and shipping

Operations personnel

Heavy Equipment Operators

“We have plenty of applicants, but not a sufficient number of qualified ones. Most of our applicants simply do not have the work experience that we require, even to maintain our insurance.”

Current Educational Needs

Bill Camarillo explained, “We need more technical training. There is a need for more practical training for truck drivers and heavy machinery operators. We have to pay more for experienced people, but it’s less expensive in the long run. For these and other occupations we need the equivalent of the Unions’ apprenticeship programs. We simply don’t have the time or money to train.”

Obstacles to Current Success

“The major obstacles are regulation and compliance issues. They usually make no sense, but they burden larger successful companies with regulations that smaller companies are not subject to or they ignore. The result is competitive inequities.”

The other obstacle is permitting delays. It can cost a company \$500,000 and two years to receive permits for a new facility, even before ground breaking can occur.

Camarillo asserts, “Fees and taxes in the state, put all of its companies at a tremendous competitive disadvantage, even over companies in other states, let alone in a globally competitive environment.”

Future Opportunities

For Agromin there are opportunities for expansion geographically and further penetration of the retail and agricultural markets. They also have opportunities in the energy sector by building a biogenic energy facility, which can produce biofuel and biogas from waste. The facility will produce energy, which can provide energy for Agromin’s production processes and excess energy can be sold. Another byproduct will be compost materials.

Other Occupations Critical to Future Opportunities

Personnel capable of energy production monitoring and monitoring of gas production.

They will need trained personnel from the engineering levels to operational technicians.

In some cases the manufacturers of the equipment would train the technicians.

Obstacles to Future Opportunities

The obstacles are the same as current operations, regulation and permitting red tape, that impede technical innovation.

California industries are “hamstrung. The investment sector, both external and internal, are reluctant to invest in California industries, because of these obstacles.

Bill Camarillo explained, “You can get a ‘no’ from permitting agencies after expending two year and a half a million dollars. If that happens two or three times, industries will go elsewhere.”

Utilization of Green Technologies

“We are trying to balance the equilibrium between ecology and economy.” Currently, they utilize diesel and electric energy. If allowed to implement their new renewable energy generation technology they will produce their own energy and sell the oversupply.

Other Green Manufacturers

All of those mentioned had already been contacted for this study.

Participation in the RICO Initiative

Bill Camarillo is very interested in participating in the implementation stage of this initiative, but only if the objectives are outlined clearly and there are clear benefits offered. They would be very appreciative of help with their own growth models. But the initiative has to be “economically driven, not just eco-driven.”

GREEN INDUSTRY EXECUTIVE INTERVIEW NOTES

iCel LA North

ANNA CARNEY MELCHER

Products and Applications

iCel's products are storage cells for electricity. These are used both by homeowners and industrial applications. The store electricity generated by solar cells, wind turbines and directly off the grid. They license the technology and assemble the storage devices. Their flagship product is "Punchhouse." It employs 12 cells to store 12 kilowatts of electricity. Ms. Melcher explained that "most people don't know that if the grid goes down, solar does to, if the user is attached to the grid. That does not happen with our storage cells. They are a start-up company with their emphasis currently on sales and marketing.

Process

They are fabricators welding components together as a part of the manufacturing process.

Key Factors for Success

Executable marketing plan

Vision for the storage concept – "passion."

The "right" people

Advocacy for legislation at the Federal level. "California has energy laws that are very favorable to us."

Critical Occupations for Current Success, Required Skills and Recruiting

Labor – manual dexterity

Welding – experience and precision

IT – Database management both for customer service and the supply chain

Electrical Engineers

Sales and Marketing – Trained to understand the product from a technical standpoint with knowledge of Solar and Wind generated energy.

They have had little difficulty recruiting at all levels

Current Educational Needs

The sales force requires training in renewable energy sources and related technologies. Otherwise there are already well trained people in the workforce.

Obstacles to Current Success

The technical obstacle is the conversion of electricity from AC to DC.

As a start-up company they need to install enough units to attract capital. These installations have to be sold by a technically knowledgeable sales force.

Also, currently they are doing design work on every system, which is unprofitable. They need to standardize the process and find ways to mass produce their product.

Future Opportunities

Ms. Melcher expressed, “The greatest opportunity are the rapidly expanding applications for the storage of electricity.” They will make their product compatible with wave generated electricity as well.

Other Occupations Critical to Success of Future Opportunities

More Design and Electrical Engineers

Process Managers for automated manufacturing

Obstacles to Future Opportunities

Lack of capital to invest in automated manufacturing and internal product design

Utilization of Green Technologies

iCel currently utilizes its own storage technology.

When they build a new manufacturing facility, it will utilize renewable energy sources.

Other Green Manufacturers

Check the membership of the Green Valley Task Force (in Los Angeles). www.valleygbtf.org

Participation in the RICO Initiative

Ms. Melcher confirms, “We definitely would like to have someone participate. Connecting people inspires people.”

GREEN INDUSTRY EXECUTIVE INTERVIEW NOTES

SOLAR WORLD

KEVIN KILKELLY

Products and Applications

They are the largest solar manufacturer in North America and the third largest in the world. California houses 40 % of their manufacturing capability and all of their sales and marketing team. Facilities in Oregon comprise 60% of their manufacturing capacity.

Their end product serves three markets

Residential rooftop – which is 10% of their overall market

Commercial/Industrial – which comprises 80% of their over-all market

Utilities- 10% of their served market

They collaborate with partners to whom they supply the solar panels.

They utilize contractors to install their systems on residential homes.

For larger installations they also have their own construction and installation division.

Processes

Systems design is a component of their business. Manufacturing is largely a fabrication and assembly process.

Key Factors for Success

Their primary issue is manufacturing cost reduction to compete against Chinese companies. Their competitors receive no interest loans, without any clear obligation to repay the principal.

They have the same challenge faced by most companies of “bringing the product to market.”

There are also political issues. The Oil and Gas industry receives very substantial incentives. A very small percentage of these would provide the solar industry with incentives to grow and develop future technologies.

Mr. Kilkelly claims, “The necessary technology is here today.”

Critical Occupations for Current Success, Required Skills and Recruiting

Sales and Marketing

Engineers – Civil, Mechanical, Electrical

Customer Service – technically knowledgeable

Systems Process (manufacturing) engineers and management

Heavy Machinery Operators

Materials Handlers

They have had no difficulty recruiting, but as they expand they are going to need more people in the same occupations in the future.

Training and educational gaps involve getting the trades up to speed including architects and installers. One training organization is the NABCEP.

Obstacles to Current Success

The industry needs to have incentives to offset development costs. The political world must be aware of their support as being self-funding, with a significant return on investment.

They need to educate financial institutions as to how their installations add value which converts to equity.

Future Opportunities

Solar perceives significant opportunities to expand in both their Residential and Utility markets, particularly the latter.

Other Occupations Critical to Future Opportunities

More of the same

Obstacles to Future Success

The same as the obstacles to current success

Participation in the RICO Initiative

Kilkenny would like representatives of RICO to visit the plant and discuss this initiative and its possibilities face to face.

GREEN INDUSTRY INTERVIEW NOTES

OJAI ENERGY SYSTEMS

BRETT SECHREST

Products and Applications

Ojai produces portable power storage systems for major entertainers and events. These systems are storage batteries that usually are recharged after use, but can be powered by solar cells. These portable systems also have military applications.

They also market the OES2 line that includes 12, 24 and 48 volt systems, which they are selling to the residential market. They provide a ten year warranty.

These products charge 2.5 times as fast as lead battery systems. Their capacity when fully charged permits 3,000 cycles before they begin to lose power.

The batteries are 1/3 of the weight of lead acid batteries. Lead acid and Duracell batteries need to be carefully recycled, because they emit toxic gases. Those emissions do not apply to Ojai batteries. They design the arrays for use of these storage systems, and these systems are 99% efficient.

Processes

Ojai is currently a laboratory and development company without a manufacturing facility.

Key Factors for Success

The current capital markets are not favorable

"We need to target specific markets on the portable side."

Critical Occupations for Current Success

Marketing and sales are critical, but basically they subcontract for collaborative design and small scale manufacturing.

Their product development is also collaborative.

Obstacles to Current Success

Capital and cashflow are the primary obstacles to his company achieving its future goals. They have so much third party involvement, from development, manufacturing to installation that cashflow becomes a major issue. Also they need to find the right applications for their technology with sufficient volume. Also, the marketplace needs to be educated about the possibilities.

Future Opportunities for Success

Ojai believes that their future opportunities involve putting renewable energy onto the “grid” utilizing their storage systems.

Other Occupations Critical to Future Success

These are not needed by them, because they do not manufacture their product and development and installation are the result of collaboration with other companies.

Obstacles to Future Opportunities

These will not change from the above noted obstacles.

Utilization of Green Technologies

They currently use only their energy storage systems. When they build their own manufacturing facility, they will use solar energy integrated with their storage systems.

Other Green Manufacturers

All of those mentioned had already been contacted for this study.

Participation in the RICO Initiative

Sechrest stated, “I’d love to be part of it. We have a very complex supply chain, and we would definitely benefit from such a collaborative. The other participants might benefit from a collaborative relationship with us.”

GREEN INDUSTRY EXECUTIVE INTERVIEW NOTES

COOL PLANET BIO FUELS

MIKE ROCKE

Products and Applications

Cool Planet manufactures micro refineries that produce high grade gasoline from non-food, low grade biomass. The refineries are mobile. The largest are tractor trailer size and are capable of producing 1,000,000 gallons of fuel per year. Because of the use of low grade biomass like wood chips or corn cobs, the process is very economical and produces gasoline at significantly less than today's cost.

A byproduct of the process is bio-char (activated Carbon) which is returned to the soil and enhances its properties, such as water retention.

Because of their use of the byproduct of the process, they are a negative carbon gasoline.

They provide training in its use and sell a maintenance contract with it. Their financing is mostly lease/purchase.

Their shareholders include Google, GE, NRG, Conoco and investment groups. They are the only bio-fuel company financed on this scale.

Key Factors for Success

Putting out sufficient numbers of refineries to have an impact on the U.S. dependence on foreign fossil fuels. Because of their investors, they have no marketing or capitalization issues, which is unusual for a twenty month old company.

Critical Occupations for Current Success, Required Skills and Recruiting

Chemical Engineers

Fuel Scientists

Mechanical Engineers

Process Engineers-Automation experts

Machining and Welding

Project Managers

The only difficulties they have recruiting is that they are looking for the cream of the crop and there is a shortage of engineers of this caliber.

Obstacles to Current Success

Managing growth is their biggest concern, not to grow so fast that it is not controlled.

Government Regulations.

Future Opportunities

They are capable of producing low cost jet fuel and Diesel Fuel.

Other Occupations Critical to Success of Future Opportunities

They will require:

Carbon Life-Cycle Experts

An expert in dealing with governmental regulations.

Experts in dealing with large oil companies.

Environmentalists

They are applying American innovation, which Mr. Rocke believes can be restored to past levels.

Obstacles to Future Growth

Government regulations

Utilization of Green Technologies

They control emissions from their plant, and they recycle everything that they can including gases and water.

Other Green Manufacturers

Mr. Rocke mentioned Ceres, a company that produces crops for energy production. “They recycle everything.”

Participation in the RICO Initiative

Mr. Rocke would like to participate on the Steering Committee. He envisions tremendous opportunities with states moving to carbon trading.

He mentioned also that their Founder and CEO, Mike Cheyki, has won the World Economic Forum awards for green industries twice. He is a real expert and might be a huge contributor.

CONTACT LIST CENTRAL COAST RICO

GREEN INDUSTRY

Agromin

Product: Organic Composts and Soil Additives

Contact: Bill Camarillo

605-485-9200

bill@agromin.com

iCel LA North

Product: Energy Storage Systems

Contact: Anna Carney Melcher

310-428-4394

annacarneymelcher@me.com

Fred Dean

818-667-2369

fhdarh@mac.com

Solar World

Product: Solar Energy

Contact: Kevin Kilkelly

805-388-6204

kevin.kilkelly@SolarWorldUSA.com

Ojai Energy Systems

Product: Energy Storage

Contact: Brett Sechrest

805-640-6700

brett@ojaienergy.com

AEE Solar/REC Solar

Contact: Matt Woods

Cell: 408-616-0283; Office: 805-540-7622

mwoods@mainstreamenergy.com

Monterey Peninsula Waste Management District

Contact: William Merry

831-384-5313

Cool Planet Bio Fuels

Contact: Mike Rocke

Cell: 408-421-9455

APPENDIX E - 2: EXECUTIVE INTERVIEW GUIDE & NOTES: AGRICULTURE

The State of California has instituted a regional initiative in ten regions throughout the State, based on the identification of Regional Industry Clusters of Opportunity and the establishment of regional initiatives for the economic and workforce development of these clusters. Under the auspices of the California Workforce Group, the Workforce Collaborative of the California Central Coast is sponsoring a study of several industry clusters in the region.

After examining data on the Central Coast economy, reviewing economic development efforts in each of the region's county's and listening to employers in the green initiative workshops, three broad industry clusters have been identified that represent the best opportunity for economic and workforce development in the Central Coast. Agriculture has been identified as one of these.

We are conducting individual executive interviews in support of this study.

In your view what are the current key factors to the success of your business (or industry)?

What occupations are critical for successfully addressing these factors?

For each occupation:

What skill or qualification is the most important?

What is the next most important?

Are there other skills or qualifications that you would like to mention that are vital for this occupation?

From your knowledge of your business (or industry) for which (if any) of these occupations is it difficult to recruit qualified personnel?

Are there current training or educational needs that are not being addressed, which would make it easier to recruit qualified and skilled employees for these positions if this training or educational programs were available?

Apart from qualified personnel are there other current obstacles to the success of your business (industry)?

Projecting into the future, what do you think are the greatest opportunities for growth of your business (industry) over the next five years?

To support growth in each of these areas, what occupations will be critical?

For each occupation:

What skill or qualification is the most important?

What is the next most important?

Are there other skills or qualifications that you would like to mention that are vital for this occupation?

From your knowledge of your business (industry regionally), for which (if any) of these occupations is it difficult to recruit qualified personnel?

Are there training or educational needs that are not being addressed, which will make it easier to recruit qualified and skilled employees for these positions if this training or educational programs were available?

Apart from qualified personnel are there, in your opinion, other obstacles to the development of these growth opportunities?

The collaborative project for which this research is being completed has a significant emphasis on “green” initiatives. These would include industries that utilize alternative or renewable sources of energy, industries providing alternative or renewable energy, manufacturers of products that promote conservation of resources, energy efficiency, or the means of using renewable sources of energy or businesses that have implemented green processes or procedures.

Are you implementing any green technologies or procedures in your business (Are you familiar with companies in your industry that are implementing green technologies or procedures)?

Are there any occupations that are required specifically to utilize these technologies or implement these procedures?

(If so) For each occupation:

What skill or qualification is the most important?

What is the next most important?

Are there other skills or qualifications that you would like to mention that are vital for this occupation?

From your knowledge of your business (industry regionally), for which (if any) of these occupations is it difficult to recruit qualified personnel?

Are there training or educational needs that are not being addressed, which will make it easier to recruit qualified and skilled employees for these positions if this training or educational programs were available?

Do you know of other businesses in your industry that are significantly implementing green technologies or procedures?

(If Winery or Model Green Agricultural Business) Do you perceive opportunities to interface with the tourism industry to, for example, provide tours of your operation?

In order to get beyond the research stage into the planning and implementation stages, the Agricultural Industry Cluster will have to establish a regional organizational mechanism, where every important stakeholder group is represented. Whatever the model, would you be willing to serve as a part of it? Who else, in your opinion should be a part of the group implementing this initiative?

EXECUTIVE INTERVIEW NOTES AGRICULTURE

CENTRAL COAST VINEYARD TEAM

KRIS O'CONNER

Key Factors for Success

The Central Coast Vineyard Team is a Nonprofit membership organization with 300 members from the agricultural sector. They represent the entire Central Coast, from Santa Cruz to Ventura Counties.

Their mission is to educate agricultural businesses to achieve sustainability through resource management, both through conservation and efficiency. They focus on water conservation and quality, energy efficiency, soil management, mechanization and integrated pest management.

They work with other agricultural associations and provide educational programs for them as well as their own membership. They also offer consumer education through events, such as their Earth Day fair.

They also offer a Standards of Excellence Certificate that rates ten chapters of farm management. There are a number of requirements for each category. Categories include subjects like:

- Irrigation

- Soil and water quality

- Energy Efficiency

- Biodiversity

- And others

Applicants for the certificate are audited and judged anonymously'

They perceive that the keys to agricultural success are:

- Relief from regulations

- Access to markets

- Ease of cross-marketing things like tourism

Critical Occupations for Success

The organization does not have specialized knowledge of occupations and skills required by the industry, but they do perceive a growing need for agricultural research to develop technologies for future efficiencies and competitive economic advantages.

They also believe that the need for technical expertise will continue to grow for the management, operation and maintenance of solar energy, wind energy, biofuel production and utilization and resource management and conservation.

Current Obstacles to Success

The greatest obstacles are economic – the cost of labor, scarcity of capital and inefficiencies in operating costs.

Another major obstacle is increasing regulatory burdens, which are imposed and enforced by multiple agencies. These regulations often duplicate themselves. Recently, for example new water quality standards were imposed for the industry. Compliance is extremely expensive and not commensurate with the very modest improvements that would result.

Future Opportunities for Growth

These opportunities will only be realized if the current obstacles and limitations can be overcome.

Occupations for Growth

The organization sees no additional key occupations other than those already noted, for which there will be an increasing demand.

Implementation of “Green” Technologies

The Central Coast Vineyard Team believes that green procedures begin with conservation and efficiency. For example, sophisticated soil management (achieving a “biological balance”) and the efficient use of water (“knowing how and when to irrigate”). Also, they advocate the use of machinery that creates efficiencies – tractors that can do multiple tasks in a single pass and mechanical pruning and leaf clipping. These processes will improve production while reducing the use of energy and creating efficiencies that result in cost-savings and greater profitability.

Participation in the Agricultural Cluster Initiative

Kris O’Conner asserted, “We would certainly want to participate as part of any organizational model that you develop. We are the wine industry’s network on the Central Coast. That’s what we do. We could contribute a lot, particularly with regard to credibility.”

EXECUTIVE INTERVIEW NOTES AGRICULTURE

DARWAYS FARM

CHRIS DARWAY

Critical Factors for Current Success

Complying with regulations is the most important factor for success. Air and Water quality standards are much higher than those imposed on competitors from other states.

Marketing is a major issue, including finding new markets

Occupations Essential for Current Success

Chris Darway indicated, "We need management level people who can track everything and address all compliance issues. This skill requires training at the community college or even university level."

"Of course the entire industry requires principals with vision, people who will lead by example. I don't ask people to do anything that I would not do."

At the entry level, they need supervisors, tractor drivers and other machinery operators.

Darway explained, "Labor is a huge problem. Most of our employees are Hispanic. We need some kind of guest worker program."

Obstacles to Current Success

The Obstacles already mentioned are critical – employment and regulations.

Opportunities for Future Success

Darway expostulated, "Where food comes from will become more and more important. Food grown in the United States represents a safer food supply. Imported food does not have to comply with the same safety standards. Bring the jobs and the production home."

Application of Green Initiatives

Darway indicated, "I don't apply green technologies. I've looked into it, and solar energy is just not profitable."

Interface of Agriculture and Tourism

Darway sees no opportunity with regard to his own business.

Participation in Agriculture Industry Cluster Initiative

Darway stated, "I don't want to say no, but I have a lot of other commitments. I would have to be very convinced of the value of participating."

EXECUTIVE INTERVIEW NOTES AGRICULTURE

FARM SUPPLY COMPANY

JIM BRABEK

Products

Farm Supply Company is cooperative with 2300 members. They supply most agricultural products . They pay taxes on their profits from sales, but any surplus of membership dues are distributed to the members.

Critical Factors for Current Success

The major factors for success are all related to economics. Marketing is crucial. Rancher and farmers must:

Own their own property

They must have adequate water

They must have crop diversification, rather than rely on a single crop.

Critical Occupations for Success

The primary concern is sufficient agricultural labor, and immigration issues are an unresolved potential problem.

Obstacles to Current Success

The primary obstacles are regulatory issues. Agriculture in this region may be the most regulated industry in the United States. Smaller growers can have difficulty monitoring all of their various needs for compliance.

Urbanization is creating conflicting demands on water. Water systems are being utilized inefficiently by urban populations, and this indiscriminate usage is having a negative effect on agriculture. Some farmers make more money selling water to Los Angeles than they would using it to grow crops. There is a huge need for education about the symbiotic relationship between agriculture and the urban populace.

Future Growth Opportunities

The key to future growth is the diversification of crops. Originally the area was devoted almost entirely to grains. Now it is Citrus, avocados, and grapes – with wine production.

Occupations Critical to Future Success

Certified Crop Advisors

Persons knowledgeable about precision agriculture or mechanization

Pest Control Advisors

Even now these occupations are in short supply, partly because farming is harder work than most young people are willing to do.

Application of Green Technology

Members are using integrated pest management where insecticides are not necessary.

Organic materials are being used as nutrients for the soil, rather than chemicals. This adds to the health of the soil and its resistance to disease causing organisms.

Water management plans for wells and reservoirs, allowing for maximum utilization of existing resources.

Other Businesses Applying Green Technologies

Talley Farms

Darway Farms

Potential for the Interface Between Agriculture and Tourism

Brabeck stated, "The primary attraction of the Central Coast is agriculture, vineyards and the ecological practices that are being applied here."

Participation in a Regional Agricultural Cluster Initiative

Brabeck asserted, "It is an absolute necessity to have a regional approach, to pool resources collaboratively. There is so much commonality. If you get this initiative to the action stage, count me in."

EXECUTIVE INTERVIEW NOTES AGRICULTURE

GONZALES RANCH

RICHARD GONZALES

Products

They are a ranch primarily producing beef cattle. They also raise walnuts and almonds

Key factors for Success

Markets increase as global population increases. However, unnecessary regulation threatens their future.

Occupations Critical to Current Success

Their primary occupations are ranch labor. They need a guest workers program. If this program was in place the U.S. would not need to give away citizenship.

The only skills that they need are tractor drivers. They have worked extensively with Mexican workers, who are hard workers. They learn all of the necessary skills and do not need outside training.

Obstacles to Current Success

Regulations. For example new machinery is required that does not work. "The Government needs to get the hell out of business."

Future Opportunities

There are growing global markets for food, and yet government regulations regarding cattle per acre have reduced this ratio to 1958 levels. These restrictions are "all environmental nonsense," but they do mean that the supply cannot meet the demand.

Occupations Necessary for Success with Future Opportunities

The same as above. Gonzales does not anticipate changes.

Obstacles to Future Success

The same as above. The Government has established a base level for energy usage. Gonzales claims, "You could not power a shack with these levels", so Gonzales pays a premium for being 400% over these mandated levels

Application of Green Technologies

They pump all of their own water. The surtax on energy makes it almost economically feasible to install solar.

Participation in Agricultural Cluster Initiative

Richard Gonzales is a Farm Bureau President and has lobbies at both the State and National levels. He would "absolutely participate" if the initiative can be taken to the action level.

EXECUTIVE INTERVIEW NOTES AGRICULTURE

LIMONIERA

HAROLD EDWARDS

Products

Limoniera is an integrated grower, packer and shipper of lemons, other citric fruits and avocados. They are the largest lemon supplier in North America. Their international trade in lemons is currently 20% of their total production.

Critical factors to Success

Proximity to markets and low cost distribution centers and transportation centers.

Best cost to value ratio as a producer.

Low cost and abundant water sources

Their products are traceable and therefore perceived to be safe. Critical competitive advantage.

Having access to deep water ports. They need refrigeration and containerization. That is currently available from Long Beach and Los Angeles. There is a port in Ventura County, Port Hueneme, that could develop the capabilities for refrigeration and containerization.

Occupations Critical to Current Success, Training and Recruitment

Limoniera has multiple labor needs.

They need a reliable source of agricultural skilled labor. These workers must be documented and legal. They can be trained internally.

They also require a skilled labor pool for processing and packaging, which they also train internally.

Educated Management is their third critical requirement. At this level the skills that are necessary are:

Business knowledge

Knowledge of multiple languages

An understanding of logistics

An agronomic educational experience is of some value. Harold Edwards explained, "We hire management level people who are graduates of Universities, such as Cal Poly, but the specialized education is less important than the ability to learn. Liberal arts students with that ability are just as valuable. We train them. In effect, we train the trainer."

Limoniera finds it easy to recruit. They have low levels of attrition. Some of their laborers have families that have worked for the company for generations.

They have received vocational training funding for teach English to non-English speaking employees and computer-related training, such as the use of spreadsheets.

Obstacles to Current Success

Regulation and taxes are the biggest obstacles. California produces a difficult environment in which to do business. Local and regional bureaucracies add to cost and create delays in implementing innovations. Examples are the difficulty in expeditiously modernizing facilities, getting permitting for housing for employees, getting permitting for truck transportation and various regulatory restrictions on their real estate business.

Future Opportunities for Growth

The opportunities are global, particularly growing markets in China and India. Edwards explained, “We need public/private partnerships that connect companies to their local communities. These partnerships would help to solve many of the regulatory obstacles and expedite the attraction of private capital.

“Governmental officials are not obstructionist in principle. Their policies evolve from ignorance of the conditions under which businesses operate and their requirements for success. That is why public/private partnerships are so critical. We need open communication between the public and private sectors to resolve these problems.”

Occupations Supporting Future Growth

The required occupations are largely the same as those required for current success, but they will place a much greater emphasis on Sales and Marketing. They will require the internal management of global distribution. Also persons with knowledge of real estate management and development will be required.

The skills needed are:

- Management skills

- Inter personal skills

- Political Relations

- The intellectual ability to perform qualitative analysis.

Application of Green Technologies

Edwards explained, “We are good stewards of our resources.” They rely heavily on solar energy. Roughly, 2/3 of their energy comes from this source. This emphasis on “sustainability” has direct cost benefits and also advantages in the marketplace, which is more sensitive to sustainable producers.

They have a partnership with a waste hauler that enables them to convert much of their organic waste into high quality organic mulch.

They also manage and have reduced their water usage.

All of these practices have enabled them to increase their production.

They also believe that the major component of their resources is their human workforce. It is their greatest asset and they invest in it. One half of all of their employees are housed in their facilities. A corollary investment is their philanthropic relationships with community colleges and Universities.

Other Businesses Using Green Technologies

Gills Onions

Amgen, which is a biotech company.

Agricultural Interface with Tourism

They have received permitting for Agrotourism. They provide visitors with many activities. This process actually assists their branding efforts.

Participation in the Agricultural Industry Cluster Initiative

Edwards explained, “We have a seasonal business. The Southern Hemisphere’s seasons are the opposite of ours. We can exploit this natural situation. We can become a food distribution hub. We can establish trade alliances with foreign sources of supply. Then we would have a 365 day a year business.

“This kind of opportunity is why we should have an agricultural regional initiative. I absolutely want to participate.”

EXECUTIVE INTERVIEW NOTES AGRICULTURE

PASO ROBLES WINE COUNTRY ALLIANCE

STACIE JACOB

Critical Factors for Current Success

The biggest factor is available water. The wine industry is both implementing major conservation policies and looking for new water sources.

Ms. Jacob explained, “There is a disconnect between political policies and the industry’s own initiatives. Trust and a balance between residential and agricultural demands need to be established. We do not do a good job of educating policymakers.”

She continued, “A major threat are environmental groups. They operate on emotion rather than facts.”

There is a movement toward supporting locally grown products. Ms. Jacob asks, “How do we leverage that movement. There is the perception that small is good and that big is bad. The fact is that larger businesses have the resources to implement more procedures and technologies that are environmentally friendly.”

Occupations that are Critical to Current Success

Critical are agricultural managers with horticultural knowledge that enables greater efficiencies in agricultural production.

Vineyards need wine makers “like restaurants need chefs.”

Sales and marketing are also crucial occupations. The consolidation of the distribution system makes it more difficult for smaller vineyards to distribute their products. Regional branding will be important – selling the region the way Napa has sold the region, so that even if the vineyard does not have name recognition the region will. Unity will be important to this effort,. “The industry needs to work together.” Direct consumer sales will be important through the use of tastings and wine clubs.

Recruiting of science based salaried people and sales and marketing professionals is difficult, because of the cost of living and the need to pay high salaries. Also, the industry needs professionals that are not only highly trained, but also knowledgeable of the wine industry. Cal Poly is a tremendous resource. They are producing more graduates with an understanding of the sales, marketing and business management aspects of the industry.

Ms. Jacob explained, “More on-going producer education is needed. Also more agricultural research is crucial to continue to improve productivity and efficiency.”

Obstacles to Current Success

As far as labor is concerned the immigration laws pose a threat. Also, the cost of living is too high. Workers are usually seasonal, with the larger vineyards able to employ a year-round core team. Paso Robles has initiated an affordable housing project, with the possibility of pooling resources within the wine industry to create a housing fund.

Also public policy is an obstacle. For example, there are restrictions on events being held on agricultural land. The primary opposition comes from residential owners, who adopt the “not in my backyard” position.

Opportunities for Future Growth

The Central Coast needs to get more branding that has the Paso and Central Coast names on the labels. Currently 50% of the grapes grown in the region are exported to other areas for wine production.

The primary opportunity is to develop distribution sites within the region. The region needs to develop the transportation and logistics to get wine moved to market. The opportunities are in logistics.

Obstacles to Future Growth

The greatest obstacle in the future will be the continuing encroachment of residential property on agricultural land and the resulting competition for resources such as water. This process of “neighborhood pressures” will continue to grow.

Application of Green Technologies and Procedures

The wine industry has increasingly applied water conservation, primarily through “drip irrigation,” but also through the use of machinery that limits water usage.

The utilization of solar energy is also increasing dramatically.

Other Businesses Utilizing Green Technology

The Jay Lohr winery has installed three acres of solar panels that rotate with the sun.

Participation in an Agricultural Industry Cluster Initiative

Stacey Jacob concurs that she would like to participate in a regional initiative, “Absolutely. This sort of collaboration is the only way these obstacles that I have mentioned will be addressed.”

EXECUTIVE INTERVIEW NOTES AGRICULTURE

POMAR JUNCTION VINEYARD AND WINERY

DANA MERRILL

Critical Factors for Current Success

The company manages vineyards, farming about 6,000 acres of grapes. They also have a tasting facility for tourists. Of the grapes raised in the region 60% are sent out of the region for processing.

Critical Occupations for Success

The industry relies on seasonal Hispanic labor. They need a guest worker program – some greater certainty of a legal labor supply.

They also need :

Heavy machinery operators

The whole supply chain – Barrel makers, glass bottle manufacturers, and warehousing

Marketing professionals

Quality control laboratory professionals

Winemakers

They rely heavily on Cal Poly, which has the largest concentration of students focused on grape production and winemaking in the country.

Obstacles to Current Success

“There are just too many regulations,” Merritt explained, “particularly at the local level. They are a pain in the neck. No one wants to invest with so much regulatory uncertainty. People just say the hell with it.”

One of the limitations to expansion is water. Vineyards use ground water, and the water on a vineyard’s land was theirs to use. Now there are regulations pending that could make that water available to anyone. “It is a tug of war between the cities and agriculture.”

Opportunities for Growth

The opportunities for growth are to convert more of the grape production into wine with two or three large producers leading the way. Much of the wine sold by smaller producers will have to be marketed directly. If wine production could be increased, then “we could attract supply chain companies, barrel makers, warehousers, bottlers and labelers.” Merrill explained.

Occupations to Support Growth

These are the same occupations required for current success.

Application of Green Technologies

Pomar was one of the first practitioners of the “sustainability” model. They comply with the standards of excellence of the Central Coast Vineyard Team. They have several thousand acres

that are certified by this group. There are other vineyards who are audited by third parties for a higher level of certification.

Opportunities for Tourism

Merrill believes that these opportunities are great, particularly for wine tasting tours and eco tours based on SIP standards (Sustainability in Practices).

Participation in Agricultural Cluster Initiatives

Merritt welcomes the opportunity for dialogue and hopefully action. He believes that a collaborative group could address regulatory issues, promote the development of a supply chain around the industry and help to deal with labor issues.

EXECUTIVE INTERVIEW NOTES AGRICULTURE

SAN LUIS OBISPO VINTNERS ASSOCIATION

BECKY GRAY

Critical Factors for Success of the Wine Industry

Tourism is critical, because interfacing with tastings, vineyard tours and wine clubs is essential for the smaller producers.

The concept of from “Farm to Table” is a major basis for promotion of the industry and all of agriculture in this region. This concept involves selling a “commitment to healthy food, not processed food.”

Critical Occupations for Current Success

Becky Gray believes, “The major requirement for success at every level is hard work. The agricultural business involves good work ethics. I am not sure that these principles are cultivated in educational institutions. Graduates sometimes have unrealistic expectations.”

Management roles include operation of the property which involves technical knowledge of soil, water management, and other agricultural sciences. Cal Poly provides excellent programs in these areas.

Marketing is also critical in terms of event planning, promotion of tours, tastings, etc. Once retailers, restaurants and distributors are engaged “they sell for you.”

Sales at all levels to retail outlets, distributors and restaurants are vitally important.

The industry has no difficulty recruiting.

Education from Cal Poly is excellent. They have a “learn by doing” program which starts out in the fields.

Becky is not as familiar with field labor. The Pacific Vineyard Company is a Management Firm that manages most of the vineyards in San Luis Obispo. Contact persons are Scott Williamson and George Donatti. The number is 805-597-8700.

Major Obstacles to Current Success

Onerous regulations. Becky Gray points out that “People do not understand. They think that organic farming is somehow synonymous with ‘green.’ Actually the reverse can be true.”

Critical Factors for Future Success

Ms. Gray expressed, “This is simple in an area like this with mostly small vineyards. Get people to the Central Coast with an interest in wine.” Word of mouth from retailers and restaurants is also very important, as is word of mouth from tastings and wine clubs.

Critical Occupations for Future Success

These will all be marketing related and technical operational management.

Obstacles to Future Success

These obstacles are the same as current success. However, technical agricultural expertise will need to expand to meet the needs of greater efficiencies and “sustainability.”

Green Initiatives and Procedures being applied in the Industry

Of the vineyards in the county 90% are SIP (Sustainability in Practice) certified. This certification not only involves “doing what is best for the soil, water management and energy conservation. They also involve community service and employee policies and benefits.” The Central Coast Vineyard Teams establish the standards and administer the certification process.

Interface of Agriculture and Tourism

Becky Gray considers this interface to be very important. Collaboration with local organizations such as Chambers of Commerce and Visitors Bureaus is ongoing. How this collaboration might be extended regionally Ms. Gray is uncertain, but she considers the possibilities intriguing.

Participation in an Agriculture Industry Cluster Initiative – Steering or Action Committees

Becky Gray could not commit to participation in the proposed initiative without the approval of her Board. All of the possible objectives are of interest to her including:

- Regulation

- Coordination with educational institutions

- Regional promotion

EXECUTIVE INTERVIEW NOTES AGRICULTURE

SANTA BARBARA VINTNERS ASSOCIATION

JIM FIOLEK

Key Factors for Success

Jim Fiolek believes that the factors for success are in place currently. The wine industry employs 5,000 people in Santa Barbara County. All of the grapes grown in the county are for the purpose of making wine, although not all of that wine is produced in the County. Of the vineyards in the County, 90% produce less than 10,000 cases of wine annually, and only three produce 50,000 cases or more.

The major areas that need to be addressed for success are:

The disconnect between urban and rural areas.

The encroachment of residential areas on land that is in use for agriculture

Legislation that favors residential over agricultural owners.

Critical Occupations for Success

Most workers in vineyards are seasoned, not migratory workers. Many of these workers are highly knowledgeable, a skill that they have acquired through experience on the job.

Another critical occupation is the Vineyard Foreman. He lives at the vineyard and manages the workforce. His experience and skills have also been acquired over time on the job.

Administrative functions, such as human resources, are provided by subcontractors as management corporations.

Professionals with college degrees in agriculture act as consultants to many vineyards.

There is little difficulty recruiting workers. The vineyard foremen know them, and if as a result of seasonal variations, there is a larger than normal demand, this can usually be met by word of mouth. No formal education is required. The necessary skills and knowledge are acquired through experience. "Some of these workers are very smart and learn basically what each vine requires," Jim Fiolek asserted.

Current Obstacles to Success

"There needs to be an integration of agricultural and urban concerns. Residents have built near to vineyards and find the requirements of farming obtrusive." An example was the use of "propane cannons," which were invaluable just before the harvest of the grapes. Because they were noisy there is now a county ordinance against their use. Residents also do not like the noise caused by trucks. An ordinance against cutting down oak trees is a hindrance to clearing arable land.

The cost of living is also an obstacle. "Where are the workers going to live?" Jim asked.

Additionally, there are clear prejudices against Latinos, who comprise the majority of vineyard workers.

Greatest Opportunities for Growth

“What is needed is better branding for the wines from the Central Coast. My responsibility is, of course, for the vineyards in Santa Barbara County.” There are limitations on the expansion of the industry, because of the climactic conditions necessary to success. These, however, also provide an advantage in that there are pockets of different climactic conditions that make it possible to produce a wide variety of wines.

Occupations required for Growth

These occupations are essentially the same as those required for current success.

Obstacles to Growth

These are essentially the same as current obstacles

Implementation of “Green” Technologies

The industry has used principles of water management for 20 years. The industry uses a “drip” system to water each plant, rather than watering all of the land. Fortunately, grapevines are extremely draught resistant.

Many vineyards use solar energy to power their water pumps.

There have been discussions of using biofuels to power farm machinery, many of which could be manufactured using the vineyard’s own organic waste.

Fox’s New Winery is an example of the application of some of these technologies.

These initiatives have been demonstrated to have economic advantages, and in some cases a direct effect on the quality of the wine.

Occupations Required for Implementation of Green Technologies

Persons trained in the maintenance of solar energy, and technicians who can manage the process of creating biofuels .There is technical training required in these areas.

Participation in the Agricultural Cluster Initiative

“I can see benefits in a regional collaborative approach to political and social issues, exchange of information about new technologies and collective branding, “Jim Fiorek explained, “Certainly I would like to participate, if others could put up with my being a termagant. “

EXECUTIVE INTERVIEW NOTES AGRICULTURE

HOUWELING'S HOT HOUSE

CASEY HOUWELING

Products

Houweling grow tomatoes under glass. Under 168 acres of glass they produce 25X as much as acreage in the open. They produce year round the equivalent of what it would take 4,000 acres to produce outdoors. Their revenues are approximately \$75,000,000.

Processes

Their process involves the normal greenhouse requirements for heating, cooling, Carbon Dioxide, water and nutrients. Their operation is completely automated and fully computerized.

Use of Green Technologies

They utilize solar energy and are energy self-sufficient. They also employ a process of heat recapture from their cooling systems. They extract the heat from their cooling systems, which otherwise would be lost into the air. They capture this heat in water and use it then to heat their greenhouses. They adopted these technologies not purely for environmental reasons. "Green technologies can create efficiencies that enable my business to be competitive. My alternative would have been to move this operation to Mexico."

Occupations, Skill Sets and Recruitment

Process Managers

Sophisticated knowledge of agriculture, ability to monitor demands for temperature, water, carbon dioxide and manage storage of these elements so that sufficient amounts are available to meet the demand.

Computer Experts

Programming, systems design, systems maintenance

Maintenance Engineers

Electricians, mechanical skills

All other employees need to be capable of dealing with complex systems requiring a high degree of sophistication.

Houweling finds it extremely difficult to hire competent people. All of their employees are internally trained. "The University system is totally inadequate for agriculture related occupations. Students have no hands on experience. Professors are out of touch. There used to be a lot of research going on at universities that was sponsored by businesses. There is a lack of cooperation between universities and business, partly because research now becomes part of the public domain. There is no proprietary protection."

Green Technologies to be Implemented in the Short Term

Houweling plans to install a cogeneration facility. Natural gas will power 6,000 horsepower generators. They will strip the carbon dioxide from the process for the growth of their plants, and

they will recapture the heat energy in water and recycle it. They will sell excess electricity back to the grid.

“Current electric generation has about 40% efficiency. They cool the heat generated with water and release it as waste. Cogeneration has an efficiency of about 102%.”

Casey Houweling explained, “With all of the renewable energy ideas, the real low hanging fruit is the energy we waste.”

Regulations are the biggest hurdle. “The process is costly and you lose 1 ½ to 2 years. That amount of time is a huge resource to business.”

Short Term Green Technology Utilization: Occupations, Skill Sets and Recruiting

These are the same as for existing green technologies

Green Technologies of the Future

Houweling believes, “We cannot envision future technologies until they happen, but in the future it will be necessary to build integrated utilization of resources into the business model. What is one businesses waste may be another businesses resource. Someone with the vision to see the big picture would have to coordinate this effort. Current legislation actually encourages waste.”

Participation in an Industry Cluster Collaborative

Case Houweling indicated that he would be willing to participate, but only if it was “productive.” He has participated at the state level on green energy committees. “All we did was to waste money on more studies. Action was what was needed, but nothing happened. It is the same with water. We addressed the problem ten years ago, but nothing has happened.”

He would consider both the prerequisites, the structure of the collaborative and its members to determine if he felt that it was capable of action.

AGRICULTURE CONTACT LIST

CONTACT LIST REGIONAL CLUSTERS OF OPPORTUNITY INTERVIEWS AGRICULTURE

CENTRAL COAST

Houweling's Hothouse

Contact: Casey Houweling

805-271-5105

casey.houweling@houwelings.com

Limoneira

Contact: Harold Edwards

805-525-5541-ext 235

hedwards@limoneira.com

Santa Barbara Vintners Association

Contact: Jim Fiolek

805-688-5881

jim@sbcountywines.com

Paso Robles Wine Country Alliance

Contact: Stacie Jacob

805-239-8463, ext 202

sjacob@pasowine.com

San Luis Obispo Vintners Association

Contact: Becky Gray

805-541-5868

becky@slowine.com

Central Coast Vineyard Team

Contact: Kris O' Conner

805-369-CCUT

kris@vineyardteam.org

Gonzales Ranch

Contact: Richard Gonzales

Richard@gonzalesranch.com

Darway Farms

Contact: Chris Darway

805-441-0266

darwaysfarm@aol.com

Farm Supply Company

Contact: Jim Brabeck

805-543-3751

jwb@farmsupplycompany.com

Mesa Vineyard Management, Inc.

Contact: Dana Merrill

805-434-4000

DMerrill@mesavineyard.com

APPENDIX E - 3: EXECUTIVE INTERVIEW GUIDE & NOTES: TOURISM

The State of California has instituted a regional initiative in ten regions throughout the State, based on the identification of Regional Industry Clusters of Opportunity and the establishment of regional initiatives for the economic and workforce development of these clusters. Under the auspices of the California Workforce Group, the Workforce Collaborative of the California Central Coast is sponsoring a study of several industry clusters in the region.

After examining data on the Central Coast economy, reviewing economic development efforts in each of the region's county's and listening to employers in the green initiative workshops, three broad industry clusters have been identified that represent the best opportunity for economic and workforce development in the Central Coast. Tourism has been identified as one of these.

We are conducting individual executive interviews in support of this study.

In your view what are the current key factors to the success of tourism in the region?

What occupations are critical for successfully addressing these factors?

For each occupation:

What skill or qualification is the most important?

What is the next most important?

Are there other skills or qualifications that you would like to mention that are vital for this occupation?

From your knowledge of your own organization or the tourism industry regionally, for which (if any) of these occupations is it difficult to recruit qualified personnel?

Are there current training or educational needs that are not being addressed, which would make it easier to recruit qualified and skilled employees for these positions if this training or educational programs were available?

Apart from qualified personnel are there other current obstacles to the success of tourism in the region?

Projecting into the future, what do you think are the greatest opportunities for growth in tourism over the next ten years?

To support growth in each of these areas, what occupations will be critical?

For each occupation:

What skill or qualification is the most important?

What is the next most important?

Are there other skills or qualifications that you would like to mention that are vital for this occupation?

From your knowledge of your own organization or the tourism industry regionally, for which (if any) of these occupations is it difficult to recruit qualified personnel?

Are there training or educational needs that are not being addressed, which will make it easier to recruit qualified and skilled employees for these positions if this training or educational programs were available?

Apart from qualified personnel are there, in your opinion, other obstacles to the development of these growth opportunities?

The collaborative project for which this research is being completed has a significant emphasis on “green” initiatives. These would include industries that utilize alternative or renewable sources of energy, industries providing alternative or renewable energy, manufacturers of products that promote conservation of resources, energy efficiency, or the means of using renewable sources of energy or businesses that have implemented green processes or procedures. Are you familiar with any of these?

Are you applying any of these?

Do you know of other companies that are?

Do any of these green initiatives provide opportunities for tourism?

Can you think of any ways that the agricultural assets of the region can also be used as assets for tourism?

In order to get beyond the research stage into the planning and implementation stages, the Tourism Industry Cluster will have to establish a regional organizational mechanism, where every important stakeholder group is represented. Whatever the model, would you be willing to serve as a part of it? Who else, in your opinion should be a part of the group implementing this initiative?

EXECUTIVE INTERVIEW NOTES

RICO TOURISM

EXECUTIVE INTERVIEW NOTES TOURISM

MARRIOTT

PAT SEMINARIO

Key Factors for Current Success

There is an identity issue for Ventura County. Are they a part of the Central Coast region or the Southern region. They are a day trip from Los Angeles. The County needs to create an identity, and if that identity interfaces with a region, that interface also needs to be defined for them to be successful.

To be successful they need a Civic Center and possibly a Convention Center.

They also need a communication plan to address the reservations from the general population against tourism.

Occupations Critical for Success

Hotel Management – Marriott trains internally and recruits from college programs across the United States.

Housekeeping

Culinary – recruit from local schools

Maintenance

Grounds keeping

Accounting

Human Resources

They have little difficulty recruiting and most of this recruiting is done through Marriott, not locally. For that reason they have no real requirements from regional Universities and community colleges.

Obstacles to Current Success

Ms. Seminario stated, “There is a lack of awareness of Ventura County. Various parts of the County compete against each other for convention business. There is no cohesive organization of these efforts within the County, let alone regionally.”

She added, “Our biggest challenge is selling space during the week. That is a promotional issue.”

Potential Opportunities for Growth

They need to promote group visits and corporate retreats. They also need to promote tours for small groups with multiple destinations. Ms. Seminario commented, “Currently we cannot accommodate large groups. A convention center would be a possible solution. Also we need to

solve the problem of attracting week-day business. Another issue is that we are very dependent upon the near-by naval base for week-day business . There is a huge risk placing so much dependency on this military base.”

Application of Green Technologies and Procedures

Marriott has an energy star rating. They have upgraded lighting automation. Air conditioning is on timers. Water usage is automated.

Opportunities for Tourism that is Related to Green Technologies

The Channel Islands offer Eco Tours, and utilize bike trails. Patagonia is a company that supplies outdoor gear and promotes Eco tours and related tourism in the area.

Participation in a Tourism Industry Cluster Initiative

Ms. Semanario explained , “The problem is there are so many groups already addressing these tourism issues and ample funding for promotion. There is unfortunately no centralization or over-all direction of these efforts. If you could develop a collaborative effort that includes the existing groups as representatives, and there could be some agreement on the coordination of their efforts, I would be happy to participate. That collaboration will be difficult to accomplish in Ventura County, let alone the Central Coast.”

EXECUTIVE INTERVIEW NOTES

SAN LUIS OBISPO COUNTY TOURISM IMPROVEMENT DISTRICT

CHERYL CUMING

Critical Factors to Current Success of Tourism

County wide collaboration is essential. There are five BIDs (Bureau Improvement Districts) in the County. These need to pool resources to promote the County. TOT funding is also essential. DCB is a County-wide marketing entity. It is establishing an alliance among the various marketing entities.

The County also needs better transportation – more flights from the airport to major hubs.

Occupations Critical to Current Success of Tourism

Hospitality management

Winemaking

Marketing to promote events.

There are difficulties recruiting management level positions. The cost of living makes compensation an issue. Also, Cheryl Cuming explained, “There is a problem with trailing spouse. There are not enough opportunities here for them.”

Training and educational needs include hospitality management. Degrees are offered by Cal Poly and other state institutions. Educational offerings for marketing degrees at Cal Poly are minimal.

Obstacles to Current Success

Ms. Cuming believes, “The biggest obstacle is the ‘closed door mentality.’ People say ‘We don’t need more people.’ There are the obstacles of territoriality and the ‘We don’t need change’ mentality.”

Opportunities for Future Success

Funding of tourist promotion is critical to future success. This process should involve partnering and collaboration.

One niche pointed out by Ms. Cuming is filmmaking. The permitting process should become more manageable to allow filmmaking in the region.

Green Technologies and Processes

The winemaking industry is applying water conservation techniques and solar energy.

There are also green architects and green builders in the area.

Opportunities for the Interface Between Agriculture and Tourism

An alliance between the wine associations, the Farm Bureau and tourism associations could promote this interface. There is a wide range of things to see from Seafood farming and processing to winemaking, as well as eco tours, which are currently being promoted.

Participation in a Tourism Cluster Initiative

Cheryl Cuming believes that the “territorialism” of San Luis Obispo is being overcome through more collaboration of organizations within the County. She can see the advantages to expanding this collaboration throughout the Central Coast and would be “delighted” to participate.

EXECUTIVE INTERVIEW NOTES TOURISM

FOUR POINTS SHERATON

VICTOR DOLLAR

VENTURA COUNTY VISITOR AND CONVENTION CENTER

JIM LAUTTJOHANN

Key Factors for Current Success

Weather and location are key assets

Available hotel space

Having a skilled workforce is critical

Effective marketing is essential

Affordable housing for employees

Public transportation that accesses the areas where most employees live

Air service to Oxnard

Within the region Ventura County as a destination often is secondary to other areas, like Santa Barbara, Monterey and Santa Cruz

The County benefits from its membership in Central Coast Visitors Guide

Occupations Critical to Success, Training and Recruitment

They have difficulty attracting qualified sales personnel.

Additionally, there is a problem with front desk agents who are customer friendly. There has been a steep decline in the interpersonal skills of younger people.

Some organizations like Marriot and Southwest Airlines address this problem with internal training.

There is also difficulty in hiring qualified housekeeping personnel. Only 1-4 qualify, partially for legal reasons.

Obstacles to Current Success

Education is one. There are currently no hospitality management programs in any of the regional Universities and Community Colleges.

On-line promotion is essential, but internal IT personnel are prohibitively expensive and outsourcing is becoming unaffordable. A greater supply of qualified people in these occupations is essential, since currently they can demand their own price.

The cost of housing is a great deterrent.

Opportunities for Growth

"We have the best weather in the world. Canada is a huge market for us, if we have the means of exploiting it. We need to draw more attractions, events, sports, festivals and so on. We need also to develop more tours in partnership with tour providers that will tour the entire region. These tours may appeal to retired baby boomers."

Implementation of Green Technologies

All of the major hotel chains have a "huge green push." This involves conservation – light bulbs, measuring waste, water and fuel. Four Points uses recycled water. The hotels achieve certification in this process.

Other Companies Using Green Technology

See list of attractions below

Tourism from Green Initiatives

There are opportunities for eco and green agriculture conventions

Eco and wine tours are already being promoted

Some agricultural tours take an historical perspective and project that perspective into the present.

Attractions:

BEYLIK FAMILY FARMS

BROKAW NURSERY, INC.

CALAVO GROWERS

CALIFORNIA STRAWBERRY FESTIVAL

CENTRAL MARKET DEARDORFF-JACKSON CO.

FAULKNER FARMS (University of California Davis Hansen Trust Agriculture Learning Center)

14292 West Telegraph Road Santa Paula, CA 93060 (805) 662-6948

FILLMORE INSECTORY

FILLMORE FISH HATCHERY

FRIEND'S RANCH

LIMONEIRA TOURS

McGRATH FAMILY FARMS

NATURIFE BERRY GROWERS

NEW OAK RANCH

OJAI CERTIFIED FARMERS MARKET

OJAI OLIVE OIL

OXNARD LEMON COMPANY

PLEASANT VALLEY FLOWERS

PICTSWEET/VENTURA MUSHROOM

RANCHO CAMULOS
REGALO OLIVE OIL
SAN MIGUEL PRODUCE
SANTA PAULA CHRISTMAS TREE FARM
SANTA PAULA CITRUS FESTIVAL
SOUTHLAND SOD
TIERRA REJADA RANCH
UNDERWOOD FAMILY FARMS
VENTURA COUNTY CERTIFIED FARMERS' MARKETS
VENTURA COUNTY WINE TRAIL

Regional Tourism Cluster Initiative

There are already initiatives. The state has a public relations program that recognizes the Central Coast as a region. There is a Central Coast Visitors Guide and several other organizations including vintner and agricultural associations. Victor Dollar expressed the opinion, "There is a need for a regional initiative, not necessarily a new organization, but a collaborative of existing organizations with representation from each. Then they would all pull together."

EXECUTIVE INTERVIEW NOTES TOURISM

VISIT OXNARD

JANET SEDERQUEST

Critical Factors for Current Success

Janet Sederquest stated, “We need funding to promote tourism as a region. Currently, Ventura County is off the radar as a destination. We are doing a better job of collaborating, however, through the Central Coast Tourism Council. We do need funding for the BID’s, but these cannot be as local as in the past.”

Occupations Critical to Current Success

The needs are people with experience operating tours and doing all of the administrative things that are required.

Recruiting can be difficult for management level people. Because the Central Coast is a rural area, it is very difficult to find a dedicated worker pool. “People here are very laid back.”

The educational system is not producing people trained in the hospitality management business, travel agents and people with customer service training. All of these specific skills seem not to be addressed by the educational system. Sederquest claims, “There are no programs for people with travel and tourism related degrees. Also, it is very difficult to find persons qualified to be Directors of Sales.”

Obstacles to Current Success

Current promotion is at times provincial and does not involve destinations in Ventura County.

There is no main gateway by air into the area.

Opportunities for Future Success

‘AG tourism’ provides a major opportunity. These opportunities involve ‘tech tours.’ And also self-guided tours. There are opportunities for meeting planners to offer day trips in the region. Post and pre-conference excursions are important. Cruise ship shore excursions also present opportunities.

Because the travel industry is very global, the area needs global promotion, with tours tied to a major destination that is internationally recognized.

Critical Occupations for Future Success

These are the same as occupation for current success.

Obstacles to Future Success

A lack of transportation into the region

A lack of promotion of the region and qualified people to design and execute the communication strategies that is necessary.

Collaborative rather than provincial promotion.

Application of Green Technology and Procedures

The hospitality industry has taken the lead in this area employing recycling, and water conservation practices.

Other measures include composting and buying locally grown food employing green farming practices

Participation in Tourism Regional Cluster Initiatives

Janet Sederquest is very interested in these initiatives. “The proposed regional collaboration is a creative opportunity for the Central Coast.”

EXECUTIVE INTERVIEW NOTES TOURISM

HOFSA HOUSE

CARRIE THEIS

Key Factors for Current Success

Hofsa House is a boutique inn that was established 60 years ago with 38 rooms. They emphasize family hospitality.

Highway One needs to be maintained. It is a regional resource that is a unique scenic resource.

Marketing of the Central Coast needs to continue. Funding for tourism marketing had been cut back and was restored by the former governor. That initiative needs to continue.

Occupations Critical to Success, Training and Recruitment

Effective marketing people

Hotel Management

Frontline Staff – Customer Service People

Carrie Theis has no difficulty recruiting and has very little turnover. Monterey Community College has a two year hospitality program and Cal State Monterey Bay is considering developing a four year hospitality program. The area had a culinary program through a trade school that is out of business.

Obstacles to Current Success

The major factor is the economy.

Ms. Theis also stated, “It is very difficult to do business in California, because of regulations. For example the legislature is considering a law where all hotels must have fitted sheets.

There is also a shortage of available capital for upgrading properties. The decline in real estate values is one reason for this shortage.

Opportunities for Growth

Ms. Theis does not see many opportunities for growth, except for a change in the economic climate. To promote growth in her current business she needs internet marketing, branding and public relations. Internet marketing can be a double edged sword because of negative reviews.

Implementation of Green Technologies

HOFSA House utilizes recycling programs and all forms of conservation. They use drip irrigation and waste management procedures.

Other Companies Using Green Technology

The hospitality industry throughout the Central Coast.

Tourism from Green Initiatives and Agricultural Assets

Ms, Theis explained, “Being green is a part of our differentiation. It is huge.”

Agricultural assets are great for tourism- touring vineyards and farms. For Hofsa House these are currently day trips and not connected to any regional approach.

Ms. Theis also believes that “freshness of the food is an asset for tourism, which is a feature that local restaurants promote.

Regional Tourism Cluster Initiative

Ms. Theis is on the Board of Directors of the Monterey Bay Visitors and Convention Bureau and has no time to participate on other committees. She recommends, however, using someone from the Monterey County Visitors and Convention Bureau on the Steering Committee.

EXECUTIVE INTERVIEW NOTES TOURISM

AG ADVENTURE TOURS

EVAN OAKES

Key Factors for Current Success

Evan Oakes' background is as a research scientist in Viticulture for the University of California. Through that position he also learned about vegetables and ornamental flowers. He started AG Adventure Tours in 1997 with a focus on agra tourism and wine tasting.

Evan Oakes explained, "This is the perfect place to do it – to integrate agriculture and tourism. There is a stable hospitality and tourism industry."

Evan believes that they key factor for success is a strong economy. "Businesses plan retreats here during good economic times, and cut back on that in bad economic times. They represent a large part of our business."

Occupations Critical for Success

"The primary need for the industry as a whole is 'front of the house' operators – customer service people," explained Dr. Oakes. Good ones are difficult to find and keep."

Obstacles to Current Success

The economy is the primary obstacle. Transportation- the price of gasoline and the traffic are other obstacles.

Monterey competes with more high profile areas like Napa, Sonoma, Paso Robles, and Tahoe.

"The Central California Tourism Council does a good job of promoting the concept of people traveling the whole coast," opined Evan Oakes.

Potential Opportunities for Growth

The economy is the predominant factor, and the ability to attract business groups.

Better marketing of wine and agriculture as a tourist attraction.

Obstacles to Future Growth

"Room prices and other costs associated with traveling here are a deterrent," Dr. Oakes explained.

Water is another obstacle. "Without an increase in the water supply, you cannot do much development. It's hard to expand. But there is no point in building more hospitality facilities with so many empty rooms as it is."

Application of Green Technologies and Procedures

"Of course my business embodies green, but the wineries here recycle everything possible and conserve water though drip irrigation and other procedures. The hotel industry is also committed to green practices," Dr. Oates asserted.

Opportunities for Tourism that is Related to Green Technologies

In Evan Oates' experience tourists do not ask for eco tours. On Agro tours education is the motivating factor, and farmers from other areas comprise the majority of the participants. "Diversity of crops and the high-tech aspect of farming on the Central Coast are what draw people to the Agro tours. The appeal of the wine tours is self-evident, but I also give people some background in viticulture."

Dr. Oates has always believed that a culinary tour program would be successful. Farms and ranches would have culinary visitor centers for tourists, where they could taste various foods and get some background on what they were eating. These culinary tours would tie into restaurants promoting that their food was fresh and homegrown.

Participation in a Tourism Industry Cluster Initiative

Dr. Oakes Response was "At least I'd like to give it a try. Let me know what is happening."

CENTRAL COAST RICO TOURISM INTERVIEW LISTS

Four Points Sheraton Ventura

Contact: Victor Dollar

805-856-9500

victor.dollar@fourpointsventuraharbor.com

Ventura Visitors and Convention Bureau

Contact: 805-648-2075

Jim Lauttjohann

805-648-2075

jim@ventura-usa.com

San Luis Obispo County Tourism Business Improvement District

Contact: Cheryl Cuming

805-547-2243

admin@SLOcountyBID.com

Mariott

Contact: Pat Seminario

805-275-1110

Visit Oxnard

Contact: Janet Sederquest

805-385-7545

HOFSA House

Contact: Carrie Theis

831-761-8463

AG Adeventure Tours

Contact: Rvan Oakes

831-761-8463

APPENDIX F: REGIONAL EMPLOYER PROJECT UPDATE, OCTOBER 2011



WORKFORCE COLLABORATIVE OF CALIFORNIA'S CENTRAL COAST

Workforce Investment Boards of

Monterey, San Luis Obispo, Santa Barbara, and Ventura Counties

In Partnership with San Benito and Santa Cruz Counties

The Central Coast's Green Initiative

I. Background on the Initiative

What Is the WCCCC?

The Workforce Investment Boards of four counties have joined to establish cooperative and mutually beneficial relationships to strengthen workforce and economic development on the Central Coast: Ventura, Santa Barbara, San Luis Obispo and Monterey. San Benito and Santa Cruz counties are closely aligned with this effort. Their goals are:

- To focus on shared priorities, one of which is the green economy and green-related jobs
- To leverage the resources of multiple partners to complement grant-related efforts

What Is the Process?

A grant from the California Workforce Investment Board encourages the Collaborative to develop regional strategies that support the expansion of the Central Coast's green economy. The grant has 3 objectives:

- To support the growth of emerging and established green businesses
- To train new and current workers in the skills needed by green employers
- To support entrepreneurs looking to create new green businesses

We aim to engage regional employers to gain a better understanding of the green economy, to develop relevant workforce strategies to meet economic needs and to uncover investment strategies. Discussion among the Collaborative's members has thus far identified several priorities.

What Are the Regional Clusters of Opportunity?

The focus of engagement and collaboration with regional employers centers on

- Energy efficiency and green building
- Energy generation and storage
- Water and other resource conservation, recycling and land management
- Transportation, with an emphasis on alternative fuels

Who Are the Major Players?

- Agriculture
- Tourism
- Military
- Private business
- Government

Employer participation is vital if we are to uncover the investments that will sustain the green economy. To this end, we are asking you to come together to consider the following questions:

- Where are the opportunities for growth?
- What are the requirements for this growth?
- What are the measurable ends that need to be achieved?
- What are the means, or the tactics, to achieve these ends?
- Where can investments be found?

II. Update on the Initiative

Synopsis of the Initial Employer Engagement Meetings for the WCCCC's Green Initiative

The WCCCC hosted the initial four employer engagement meetings to introduce and discuss the region's green initiative as part of the Regional Industry Cluster's of Opportunity grant. The meetings were held in Ventura on Monday (Oct. 11, 2010) and King City on Tuesday (Oct. 12, 2010) and each location had one meeting for the agricultural industry and one for the building and design community.

The Growth Opportunities

Although the meetings were split between agriculture and the building & design industries there were many common themes about the opportunities for growth within the region. The following opportunities were items that were identified more than once throughout the two-day process.

7. **Develop business opportunities along the agricultural supply chain:** Stakeholders discussed the agricultural services that could be expanded upstream, including food safety monitoring, renewable energy and water management as well as the downstream opportunities including food processing, creating food ready to eat and packaging.

8. **Increase adoption of water distribution and treatment technologies:** Stakeholders identified different water treatment and distribution technologies that reduce energy and water loss and have an opportunity to grow considerably in the region.
9. **Promote, expand and connect sustainable tourism in the region:** Stakeholders communicated the importance of connecting several of the region's unique green resources to the tourism industry, including; agricultural tourism, sustainable wineries, green transportation systems, and sustainable destinations.
10. **Communicate and educate Green building resources and best practices (Step Up 2 Green) including emphasis on new opportunities with retrofitting buildings:** Stakeholders communicated the need to identify and communicate the resources and opportunities associated with green building in the region. This opportunity is also about promoting and adopting best practices for building that are incentive based and not required by legislative mandates.
11. **Develop business opportunities for green waste processors and alternative fuels development:** Stakeholders discussed new and emerging opportunities in green waste processing and alternative fuels.
12. **Support development of pre-fabricated homes in the region and for export:** Stakeholders identified the growing opportunities associated with green pre-fabricated homes.

The Regional Requirements

Requirements to meet these different growth opportunities typically fell into several general categories. Under each of the categories there are specific examples that were identified by more than one stakeholder as a requirement for the region's green growth opportunities.

6. Infrastructure and/or Policy
 - Develop the regional water treatment and distribution systems
 - Reform to CEQA, CEC requirements and the building permitting process
 - Electric car charging stations and other infrastructure for clean transportation
 - California green building codes
 - Local hiring requirements (PLA's)
7. Education & Communication
 - Develop college level courses for high technology agriculture (e.g. UC Davis)
 - High School education programs in green building and design
8. Research & Information
 - Create a comprehensive mapping of Agriculture's supply chain for the region
 - Develop and update a database and GIS map of central coast sustainable tourism resources.
 - Develop an economic impact assessment of future water and energy costs for the agricultural industry under different scenarios.

9. Collaboration & Connectivity

- Have the agriculture commissioners of the four counties work together to support regional entrepreneurship in agriculture
- Improving connectivity between educational institutions and industry

10. Connecting to Potential Customers

- The Port and opportunities to green the port
- The military and opportunities to develop green products and services
- Greening Schools in the region
- Agriculture to the renewable energy industry & green modernization

III. Next Steps for the Initiative

Over the next several months (November 2010 to May 2011) the WCCCC will continue to work with regional stakeholders and delve further into the planning process to solidify the region's green growth opportunities. In the next phases of the initiative a regional action plan will be developed around the opportunities that have been identified along with initial investment strategies. If you would like to know more about the WCCCC's Green Initiative please contact;

Victoria Sanchez: V.Sanchez@sbcsocialserv.org

or

Bill Buratto: bburatto@vceda.org

APPENDIX G: REGIONAL ACTION CLINIC #1: SUMMARY, APRIL 2010

REGIONAL INDUSTRY CLUSTERS OF OPPORTUNITY (RICO)

REGIONAL ACTION CLINIC #1 Diagnosis and Collaborative Priority-Setting

APRIL 28, 2010

TEAM DISCUSSION SUMMARY

SESSION #1

IDENTIFY TOP CLUSTERS OF OPPORTUNITY AND GREEN SEGMENTS

1. **What are your region's important clusters of opportunity – in terms of employment size and growth, level and growth of specialization, level and growth of wages?**

Wine & Agriculture

Technology – Research

Construction – Building & Design – Architecture & Design Firms (Engineering / Environmental Consulting

2. **What are your region's important green industry segments – in terms of employment size and growth, and level and growth of specialization?**

1. Agriculture (to include water conservation & recycling)
2. Innovation/ Knowledge / Technology & Research & Education – Clean Technology Research
3. Green Micro Enterprises
4. Energy Generation (Solar, Wind, Hydro, Bio Mass, Bio-Fuels (Algae))
5. Green Buildings (Retrofitting/Energy Auditor/Landscaping/Design)
6. Resource Conservation (Recycling, Water, Wastewater)
7. Manufacturing
8. Transportation (Alternative Fuels, Vehicles and Transportation)

Local Serving Advantages

1. Eco Tourism – Green Focus in Tour
2. Size and Demand from our large Agriculture industry
3. AB 811 – Local Implementation
4. SB 375 – Local/Regional Implementation
5. Early Adopters – Universities, Military, and local govt

SESSION #2

IDENTIFY KEY LINKAGES AMONG CLUSTERS OF OPPORTUNITY AND GREEN SEGMENTS

1. What are the key relationships among your clusters of opportunity and green industry segments?

According to CE's analysis of the Central Coast's green establishments are largely found in non-clustered industries. Air & Environment accounts for the majority of the green employment in the knowledge & innovation services. Air & Environment is a relatively large green employer throughout the state so we need to better understand what type of employers this accounts for.

Our region sits in between Los Angeles and Southern California and the Bay Area so we need to be aware of how we serve our neighbors. Serving the agriculture industry (resource conservation technologies) – serving the education, technology and research facilities that exist in the region. There is also the question of how manufacturing could be a viable strategy particularly in the Southern part of the region (Ventura County and parts of SB & SLO)

2. Considering employment, specialization, wages, and linkages, what clusters and/or segments are the top candidates for your collaborative priority-setting process?

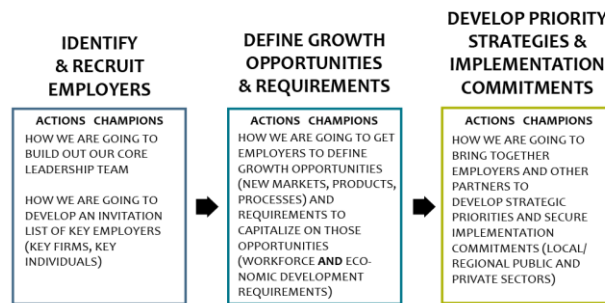
Options

- Focus on one or more clusters of opportunity (which could also include key green “user” industries or key green “provider” industries or both)
- Focus on one or more green industry segments (which could also have a strong presence in or linkage to one or more clusters)

1. Agriculture (could include water, waste and energy conservation)
2. Innovation/ Knowledge / Technology & Research & Education – Clean Technology Research
3. Green Micro Enterprises
4. Energy Generation (Solar, Wind, Hydro, Bio Mass, Bio-Fuels (Algae))
5. Green Building (Retrofitting/Energy Auditor/Landscaping)
6. Resource Conservation (Recycling, Water, Wastewater)
7. Green Products (Manufacturing)
8. Transportation (High Speed Rail / Alternative Vehicles/ Alternative Fuels)
9. Eco-tourism / Green tourism

SESSION #3

DESIGN COLLABORATIVE PRIORITY-SETTING PROCESS



IDENTIFY & RECRUIT EMPLOYERS

	ACTIONS	CHAMPIONS
How we are going to build out our core leadership team	Green Coast Innovation Zone, Monterey and Santa Barbara will work together to identify the key players. We will also include early adopters	Bill B. – will work with Karen and Kim to identify key players Maryann L. from Monterey
How we are going to develop an invitation list of key employers (key firms, key individuals)	Everyone (Bill, Karen, Loyanne and Kim) will send me their current database of green employers we will combine that with VC flows, industry specific association data and any self-identified lists.	Josh will take the first cut at pulling this together after getting data from the partners.

DEFINE GROWTH OPPORTUNITIES AND REQUIREMENTS		
	ACTIONS	CHAMPIONS
How we are going to get employers to define growth opportunities (new markets, products, processes) and requirements to capitalize on those opportunities (workforce development and economic development requirements)	<p>Depends on the Business – ask them</p> <ol style="list-style-type: none"> 1. Jobs 2. Revenue / Profits 3. Exports 4. Quality / Sustainability of Jobs 5. Growth in green specific markets, products and services 6. % of employees who develop new skills and education 	<p>Yet to be determined but facilitated by</p> <ol style="list-style-type: none"> 1. Victoria Sanchez 2. Josh Williams
DEVELOP PRIORITY STRATEGIES AND IMPLEMENTATION COMMITMENTS		
	ACTIONS	CHAMPIONS
How we are going to bring together employers and other partners to develop strategic priorities and secure implementation commitments (local/regional public and private sectors)	<p>Complete Employer survey in Green industries of focus to assess and measure concerns/priorities of employers.</p> <p>Communicate to business leaders the overall findings from employers and develop initial investment strategies.</p> <p>Develop localized meeting, Use Webinars, video conferencing and maybe have one regional event. CITRIX see what they can do / Second life</p>	<ol style="list-style-type: none"> 1. Bill B. 2. Maryann L. 3. Karen Dwyer 4. Kim H.

APPENDIX H: REGIONAL ACTION PLAN SUMMARY, FEBRUARY 2011

PRIORITY STRATEGIES	MEASURABLE OUTCOMES	IMPLEMENTATION COMMITMENTS	
		ACTUAL	POTENTIAL
<p>Workforce development:</p> <p>Cluster Teams works with local institutions to expand local education and training that prepares local talent for green employment.</p>	<p>Growing collaboration between local companies and regional educational institutions (projects, consulting, graduates, students) promotes innovation among local firms</p> <p>Growing pool of contractors and workforce certified to do energy efficiency retrofits</p>	<p>Central Coast Career Readiness Consortium (CCCCRC)</p> <p>Comprehensive Regional Needs Assessment/Gap Analysis</p>	<p>Building the partnership with educational institutions to deliver mutual benefits to the industry and the institutions and their students. Particular attention will be paid to connecting strengths in existing curriculum and potential areas of development with the local clusters demand.</p>

Regional Industry Clusters of Opportunity – Report

Workforce Collaborative of California's Central Coast

<p>Economic development:</p> <p><u>Building & Design, Energy</u></p> <p>Create a business-led Quality Development Coalition of leaders and employees of cluster and other businesses, and other community partners. Coalition would:</p> <ol style="list-style-type: none"> (1) Develop criteria for high quality development. (2) Support projects that meet these criteria at public meetings. (3) Conduct a campaign to educate general public on the connection between quality development and economic vitality. (4) Create an infrastructure planning and financing team to identify needs and strategies to fund infrastructure improvements, including a standing advisory committee to the Region's Boards of Supervisors. (5) Promote rezoning of land in the Region for housing as part of the Land Use Element Update that is currently in progress. (6) Encourage analysis of economic impacts of projects and policies in the region, and consistency with the Economic Element of the General Plans. 	<p><u>Building & Design, Energy</u></p> <p>Shorter and more certain time frame to get from permit application to decision</p> <p>Permitting process balances economic vitality and environmental well-being, and results in more approvals of high-quality projects.</p> <p>Land use ordinances allow flexibility for high-quality projects (e.g., through a Planned Development Ordinance)</p> <p>Rezoning of land and construction of workforce housing for the clusters critical to the region's economic vitality</p> <p>Priority is given to commercial building modifications that enable companies in the key clusters to remain competitive and contributing to the economic vitality and quality of life of the region</p> <p>Growing volume of global design and building work for local companies</p> <p>Innovative local design and building becomes a growing share of total design and building in the</p>	<p><u>Building & Design, Energy</u></p> <p>Monterey County Wind Turbine Permitting Roundtable</p> <p>Monterey County Graywater and Rainwater Catchment Working Group</p> <p>Solar PV Permitting Task Force</p> <p>STEPUP2GREEN</p> <p><u>Aq/Tourism</u></p> <p>"What's My Name" Contest</p> <p>Savor the Central Coast</p> <p>Sustainable Hospitality Symposium: Linking "New" Sustainable Event Standards to Economic Development</p>	<p><u>Building & Design, Energy</u></p> <p>Create a team on infrastructure planning and finance to work with County Boards to establish advisory committee</p> <p>spotlighting examples of innovative design and building by local companies</p> <p>promoting the region's innovative design and building capabilities globally</p> <p>Interview green energy companies to profile them, understand their reasons for locating in the region, and identify common needs to be addressed</p> <p>Develop clear statement of the region as a green energy center, with value to local residents and outside world.</p> <p><u>Aq/Tourism</u></p> <p>Develop broad base of initial funding commitments from government, business, labor, and other parties</p> <p>Incorporate regional brand into local marketing efforts/materials, working with BID Alliance, to begin to promote connections</p>
---	---	--	--

Regional Industry Clusters of Opportunity – Report

Workforce Collaborative of California's Central Coast

<p>Coalition would also provide individuals to participate and work with the region's Process Improvement Committee, which will examine public processes and develop specific changes to improve process efficiency.</p> <p>Form partnership to spotlight and promote innovative locally-designed projects being built in region and by local companies in other locations to encourage expansion of innovative design and building locally and as a way to promote exports of our expertise globally.</p> <p>Develop partnership agreements between the local design and building industry and educational institutions, outlining specific commitments to collaborate and drive innovation.</p> <p>Create a "Green Energy Team" to expedite resolution of issues affecting approval of green energy production projects, beginning with two solar projects currently in process.</p> <p>Green Energy Team promotes the region as a center of green energy production, developing local and attracting outside investors, companies, and talent.</p>	<p>region</p> <p>Increasing resource savings and efficiency in region due to innovative design and building</p> <p>Increasing regional for green energy production and use</p> <p>Improvements in permitting processes for green energy production</p> <p>New and expanded green energy production facilities in region</p> <p>Increases in production, use, and exports of green energy</p> <p>Increases in companies providing green energy products and services</p> <p>Increases in jobs in green energy companies</p> <p>Growth of green energy use as a share of total energy use</p> <p>Become recognized leader in green energy in a way that attracts national and international attention, investment, and other benefits (e.g., ecotourism)</p> <p>Increasing use of local incentives</p>		<p>Inventory/identify the full range of regional specialties, and share information widely, facilitating connections and packaging of specialties</p> <p>Develop a "sustainable" regional model: from event to strategy of connecting and showcasing local specialties. Involve local marketing firms in development of an overall strategy</p> <p>Summarize and package data on economic impacts of regional model as a specific example of the multiple benefits of the cluster to the communities</p> <p>Build team to carry message about value of the cluster to all parts of the region, including the VCB, cluster businesses, labor, employers in other clusters, chambers, BIDs, etc.</p> <p>Advocate for package of amendments to agricultural tourism ordinances</p> <p>Identify other policies that could help promote and connect regional specialties (e.g., improved permitting process for value-added agricultural processing, funding or tax incentives to reward packaging of specialties, signage)</p>
--	--	--	--

Regional Industry Clusters of Opportunity – Report

Workforce Collaborative of California's Central Coast

<p>Green Energy Team encourages green financing to develop, package, and publicize incentives for energy efficiency upgrades (e.g., floating of bonds, local bank support/packages, utility incentives, public procurement, etc.)</p> <p><u>Ag/Tourism</u></p> <p>Expand region wide funding to promote the Ag/Tourism cluster. This sustainable funding mechanism or arrangement could involve: consistent and expanded region wide tourism funding through annual contributions from community BIDs, greater participation of all lodging entities into BIDs or VCB, or other models.</p> <p>Launch a unified, region wide branding and marketing campaign that (1) inventories the full range of cluster specialties, (2) promotes the concept of the “Central Coast Experience” by describing and connecting diverse assets, and (3) supports collaborative events that showcase the region’s assets.</p> <p>Launch a parallel community awareness campaign that educates five groups (general public, policymakers, other clusters, potential opponents, our own employees) about the value of the cluster to the region’s economic vitality and quality of life.</p>	<p>for energy efficiency improvements (e.g., utility, Homestar, Pace loans, energy efficient mortgages)</p> <p><u>Ag/Tourism</u></p> <p>Increase in awareness of the full range of cluster assets within region among residents, governments, businesses, as well as among potential tourists outside the region</p> <p>Increase in support for the cluster among local residents and public officials due to better understanding of the cluster’s multiple benefits (e.g., quality of life amenities for residents and talent for other industry clusters, tourist spending that helps fund local jurisdictions, job creation)</p> <p>Increase in supportive policies in local jurisdictions and alignment across government agencies (e.g., water resource planning for agriculture, permitting that enables value-added wine industry investment, ordinances that enable ag-tourism and local sales, and land use planning to promote value-added agriculture)</p> <p>Increase in unique agricultural products, ag-tourism offerings, and other specialties</p>		
---	--	--	--

Regional Industry Clusters of Opportunity – Report

Workforce Collaborative of California's Central Coast

<p>Promote local policy changes that support individual specialties and combinations of specialties, including (1) less restrictive rules on events and local sales to promote ag-tourism, and (2) more flexibility for value-added improvements including ag processing and winery development.</p>	<p>Increase in packaging of multiple specialties into unique regional experiences (e.g., connecting wine, food, entertainment, cultural, educational, environmental, recreational assets in different combinations)</p> <p>Increase in events with local interest marketed outside the area, resulting in more people traveling to the region and more local residents venturing outside their immediate community to participate.</p> <p>Increase in occupancy rates, deplanements, entrance into state parks</p> <p>Increase in visitor length of stay</p> <p>Increase in average spending per visitor</p> <p>Increase in sales of local products in local restaurants, retail outlets, schools, hospitals, etc.</p> <p>Increase in tourism driven revenues for local jurisdictions</p>		
---	---	--	--

APPENDIX I: REGIONAL INDUSTRY FOCUS, AUGUST 2010

To: Devla Singh, California Workforce Investment Board

From: Workforce Collaborative of California's Central Coast (WCCCC), Green Advisory Group

Date: August, 9, 2010

Topic: Industry Focus for the Regional Industry Clusters of Opportunity

The purpose of this memo is to describe the initial focus of the WCCCC's green initiative and the industries and technologies that will be a priority for the regional industry clusters of opportunity process.

Members of the WCCCC have met on several occasions and after evaluating different regional research findings on the green economy have identified the industries and technologies they will concentrate on in developing economic and workforce development strategies for the region.

The economic and workforce development strategies are meant to achieve four regional objectives;

1. Support the growth of emerging and established green businesses in the green employment segments that have been identified.
2. Train and educate new and current workers in the skills that are needed by green employers in the region.
3. Support entrepreneurs who are looking to create new green businesses in the Central Coast.

The process to meet these objectives will be done through a regional process of engaging and collaborating with regional employers, developing a more complete understanding of the Central Coast's green economy, developing workforce and economic development strategies, and lastly identifying and developing initial investment strategies that support the objectives identified.

WCCCC's Initial Green Priorities

The following description of green employment segments, traditional transitioning industry clusters, and regional economic drivers provides the initial focus of where the WCCCC will concentrate its engagement and collaboration with regional employers.

Green Employment Segments: These segments represent the green technologies and sustainable services that businesses are looking to provide to the region and export beyond the Central Coast.

- **Energy Efficiency & Green Buildings:** This green employment segment includes employers that are developing, implementing and installing new energy efficient devices as well as energy and resource efficient buildings within the region. Regional employers include:
- **Energy Generation & Storage:** This green employment segment includes employers that are developing, installing and maintaining new renewable energy devices in Solar, Wind and biological based fuels as well as new energy storage devices and/or services. Regional employers include:
- **Water and other resource conservation, recycling and Land Management:** This green employment segment is focused on providing products or services

that reduce overall usage of water, fuels, pesticides and/or land to produce agricultural and related goods. Regional employers include:

- **Transportation with an emphasis on Alternative Fuels:** This green employment segment is focused on developing new technologies and/or alternative fuels that can be used by the transportation industry to reduce the emission of greenhouse gases. Regional employers include:

Traditional Transitioning Industry Clusters: These clusters represent those employers in more traditionally defined industries that are providing new green products and services and could expand within the region. These industries include:

- **Agriculture:** This industry cluster represents those employers that are producing agricultural products as well as those employers that develop products and provide services to agricultural producers. This transitioning industry cluster would include;
 - Water and other resource conservation, recycling & land management
 - Transportation with an emphasis on alternative fuels
 - Energy generation and storage
- **Building and Design:** This industry cluster represents those employers that design, build and retrofit buildings within the region as well as those employers that provide supporting products and services for this industry. This transitioning industry cluster would include;
 - Energy efficiency and green buildings
 - Energy generation and storage

Economic Drivers: These broad economic drivers of the central coast economy represent significant opportunities for green employment segments and traditional transitions industry clusters that are looking to expand the markets for their products and services. These economic drivers also represent early adopters and champions of the region's sustainability emphasis.

- **Agriculture:** Provides one of the region's highest location quotients, indicating a high employment concentration. The large agricultural employment combined with the universities and related research institutions provide a fertile environment for developing new alternative fuels and resource efficient agricultural products.
- **Tourism:** Is one of the region's economic drivers with significant revenue and employment going into restaurants, hotels and related services for regional tourists.
- **Military:** The military is aggressively pursuing cleaner and greener resources and technologies. Central coast employers who can provide these products and services will have significant opportunities not only within the region but across the country.
- **Local Government and the Public Sector:** As early adopters and champions of green products and services, local government and the public sector provide a significant built-in customer for emerging green employers.

APPENDIX J: INTRODUCTION TO THE PROJECT INITIATIVE, AUGUST 2010

From: Workforce Collaborative of California's Central Coast (WCCCC), Green Advisory Group

Date: August 25, 2010

Topic: Introduction to the WCCCC's – Green Clusters of Opportunity Initiative

The purpose of this memo is to introduce the WCCCC's green initiative and the industries and technologies that will be a priority for the regional industry clusters of opportunity process.

Who is the WCCCC

The Workforce Collaborative of California's Central Coast (WCCCC) consists of the Workforce Investment Boards (WIB's) of Monterey, San Luis Obispo, Santa Barbara and Ventura Counties. Officially recognized by the Boards of Supervisors of the four counties, the Collaborative was formed to establish cooperative and mutually beneficial relationships to strengthen workforce and economic development on the Central Coast. Other counties with a close alliance with the WCCCC are Santa Cruz and San Benito. Our goals are (1) to focus on shared priorities in allied health, green-related jobs and hospitality and (2) strategic alignment to leverage opportunities for WIA and non-WIA funding. The members are committed to regional strategies and collaboration, to the demonstration of regional need and focused action plans and to the leveraging of the resources of multiple partners to complement grant-related efforts. The WCCCC has evolved into a learning community that shares information and insights to solve regional workforce problems in a sustainable way.

What is the WCCCC's Green Clusters of Opportunity Initiative

As part of a statewide effort to support economic and workforce development in the green economy, members of the WCCCC came together and put together a plan to evaluate and develop workforce and economic development strategies for the Central Coast. Ultimately, the goal of this initiative is to develop regional strategies that support the development and expansion of the Central Coast's green economy.

The economic and workforce development strategies that are developed are meant to achieve the following regional objectives;

1. Support the growth of emerging and established green businesses in the green employment segments that have been identified.
2. Train and educate new and current workers in the skills that are needed by green employers in the region.
3. Support entrepreneurs who are looking to create new green businesses in the Central Coast.

The process to meet these objectives will be done through a regional process of engaging and collaborating with regional employers, developing a more complete understanding of the Central Coast's green economy, developing workforce and economic development strategies, and lastly identifying and developing initial investment strategies that support the objectives identified.

Members of the WCCCC have met on several occasions and after evaluating different regional research findings on the green economy have identified the industries and technologies they will concentrate on in developing economic and workforce development strategies for the region.

WCCCC's Initial Green Priorities

The following description of green employment segments, traditional transitioning industry clusters, and regional economic drivers provides the initial focus of where the WCCCC will concentrate its engagement and collaboration with regional employers.

Green Employment Segments: These segments represent the green technologies and sustainable services that businesses are looking to provide to the region and export beyond the Central Coast.

- **Energy Efficiency & Green Buildings:** This green employment segment includes employers that are developing, implementing and installing new energy efficient devices as well as energy and resource efficient buildings within the region.
- **Energy Generation & Storage:** This green employment segment includes employers that are developing, installing and maintaining new renewable energy devices in Solar, Wind and biological based fuels as well as new energy storage devices and/or services.
- **Water and other resource conservation, recycling and Land Management:** This green employment segment is focused on providing products or services that reduce overall usage of water, fuels, pesticides and/or land to produce agricultural and related goods.
- **Transportation with an emphasis on Alternative Fuels:** This green employment segment is focused on developing new technologies and/or alternative fuels that can be used by the transportation industry to reduce the emission of greenhouse gases.

Traditional Transitioning Industry Clusters: These clusters represent those employers in more traditionally defined industries that are providing new green products and services and could expand within the region. These industries include:

- **Agriculture:** This industry cluster represents those employers that are producing agricultural products as well as those employers that develop products and provide services to agricultural producers. This transitioning industry cluster would include;
 - Water and other resource conservation, recycling & land management
 - Transportation with an emphasis on alternative fuels
 - Energy generation and storage
- **Building and Design:** This industry cluster represents those employers that design, build and retrofit buildings within the region as well as those employers that provide supporting products and services for this industry. This transitioning industry cluster would include;
 - Energy efficiency and green buildings
 - Energy generation and storage

Regional Economic Drivers: These broad economic drivers of the central coast economy represent significant opportunities for green employment segments and traditional transitioning industry clusters that are looking to expand the markets for their products and services. These economic drivers also represent early adopters and champions of the region's sustainability emphasis.

- **Agriculture:** Provides one of the region's highest location quotients, indicating a high employment concentration. The large agricultural employment combined with the universities and related research institutions provide a fertile environment for developing new alternative fuels and resource efficient agricultural products.
- **Tourism:** Is one of the region's economic drivers with significant revenue and employment going into restaurants, hotels and related services for regional tourists.
- **Military:** The military is aggressively pursuing cleaner and greener resources and technologies. Central coast employers who can provide these products and services will have significant opportunities not only within the region but across the country.
- **Local Government and the Public Sector:** As early adopters and champions of green products and services, local government and the public sector provide a significant built-in customer for emerging green employers.

APPENDIX K: ECONOMIC IMPACT ASSESSMENT OF ECONOMIC DRIVER INDUSTRIES, AUGUST 2010

To: WCCCC Green Advisory Group

From: Josh Williams

Date: August 20, 2010

Topic: Economic Impact of Central Coast Economic Driver Industries

The purpose of this memo is to better understand and begin to quantify the economic and workforce impact of the three key industry drivers identified for the WCCCC's Green Initiative. These economic driver industries of the Central Coast include;

1. **Agriculture** combining traditional crop and animal production with directly related support activities for agriculture and forestry,
2. **Tourism** combining accommodations and food services and drinking places; and
3. **Military** with funding coming directly from the federal government.

These broad economic driver industries of the central coast economy represent significant opportunities for green employment segments and traditional transitions industry clusters that are looking to expand the markets for their products and services. They also represent early adopters and champions of the region's sustainability emphasis.

Current and Projected Employment

In the second quarter of 2010, these three industries accounted for 185,738¹⁴ jobs in the Central Coast, representing 18 percent of all employment in the Central Coast. By 2015, these three industry drivers will account for 194,233 jobs in the Central Coast, with a small decline in the overall percentage of the region's employment, due to the expected decline in military employment.

Table 7 Central Coast Employment for Economic Driver Industries

Central Coast Employment	2010 Employment	2015 Employment Forecast	% Change from 2010 to 2015
Agriculture	87,775	91,437	4.2%
Tourism	82,060	87,135	6.2%
Military	15,903	15,661	-1.5%
Total Industry Driver Employment	185,738	194,233	4.6%
% of Central Coast Employment	17.9%	17.5%	

The forecast from 2010 to 2015 shows employment in agriculture and tourism to grow at a moderate pace while overall employment in the military actually declines over the same time period.

¹⁴ Source: EMSI Complete Employment – 2nd Quarter 2010

Direct Economic Impact (Employment * Wages)

While overall employment in the industry drivers are high, total wages generated by each of these industries and the direct economic impact these industries have upon the region are somewhat lower. This is due to the relatively low average earnings per workers (EPW) found in tourism (\$22,789) and agriculture (\$35,005) to a lesser degree. The economic driver industries represent 12 percent of the total wages earned in the Central Coast.

Table 8 Central Coast Direct Economic Impact for Economic Driver Industries

Central Coast Employment & Wages	2010 Employment	Earnings Per Worker (EPW)	Direct Economic Impact (\$1,000's)
Agriculture	87,775	\$ 35,005	\$ 3,072,543
Tourism	82,060	\$ 22,789	\$ 1,870,097
Military	15,903	\$ 87,858	\$ 1,397,206
Average Regional EPW		\$ 49,907	
% of Regional Wage Employment			12.3%

Agriculture in the Central Coast

Agriculture is generally split into two categories, crop and animal production and support activities for agriculture and forestry. Over the next five years the Central Coast's agricultural concentration is expected to increase slightly.

Table 9 Agriculture in the Central Coast

Agriculture in the Central Coast	2010 Jobs	2015 Jobs	Current EPW	2009 Establishments	2010 LQ	2015 LQ
Crop and animal production	42,003	41,437	\$36,565	1,617	12.23	12.42
Support Activities for Agriculture and Forestry	45,772	50,000	\$33,573	587	2.73	2.84
Total	87,775	91,437	\$35,005	2,204	4.58	4.92

The agriculture industry is most concentrated in Monterey County, but each of the County's have at least twice the national average for agricultural employment given the size of their workforce.

Table 10 Agriculture in the Central Coast by County

County	2010 Jobs	2010 Location Quotient
Monterey, CA (6053)	41,795	10.23
Ventura, CA (6111)	22,923	3.61
Santa Barbara, CA (6083)	16,685	2.97
San Luis Obispo, CA (6079)	6,372	2.33

Tourism in the Central Coast

For this analysis the tourism industry was split between accommodations and food services and drinking places. It should be noted that food service and drinking places are local population serving as well as tourist serving, so the accommodation LQ's are a more accurate reflection of industry concentration for tourism.

Table 11 Tourism in the Central Coast

Tourism in the Central Coast	2010 Jobs	2015 Jobs	Current EPW	2009 Establishments	2010 LQ	2015 LQ
Accommodation	18,860	19,847	\$31,949	641	1.68	1.7
Food Services and Drinking Places	63,200	67,288	\$20,056	3,540	1.06	1.07
Total	82,060	87,135	\$22,789	4,181	1.16	1.17

Tourism is more developed in the Northern part of the region, with a greater number of jobs and a higher level of industry concentration.

Table 12 Tourism in the Central Coast by County

County	2010 Jobs	2010 Location Quotient
San Luis Obispo, CA (6079)	27,162	1.43
Monterey, CA (6053)	20,688	1.3
Santa Barbara, CA (6083)	19,718	1.21
Ventura, CA (6111)	14,491	0.95

Military in the Central Coast

The military in the Central Coast accounts for almost 16,000 jobs with a high average earnings per worker.

Table 13 Military in the Central Coast

Military in the Central Coast	2010 Jobs	2015 Jobs	Current EPW	2009 Establishments	2010 LQ	2015 LQ
Regional Total	15,903	15,661	\$87,858	N/A	1.3	1.31

Military employment is most concentrated in Ventura County with over 6,000 jobs and an industry concentration, twice the national average. Monterey has over 5,000 jobs and is well above the national average. San Luis Obispo has less than 500 military jobs and is well below the national average in military employment.

Table 14 Military in the Central Coast by County

County	2010 Jobs	2010 Location Quotient
Ventura, CA (6111)	6,600	2.15
Monterey, CA (6053)	5,617	1.34
Santa Barbara, CA (6083)	3,244	1.1
San Luis Obispo, CA (6079)	441	0.25

APPENDIX L: WORKFORCE AND ECONOMIC PROFILE OF KEY INDUSTRY CLUSTERS

To: WCCCC Green Advisory Group

From: Josh Williams

Date: March 1, 2011

Topic: Workforce & Economic Profile for the Central Coast's Industry Cluster

The purpose of this memo is to provide an initial draft of the economic and workforce development profiles of the three industry clusters that are the focus of the Workforce Collaborative of California's Central Coast (W4C) green industry clusters initiative. They include;

1. Agriculture & Tourism,
2. Energy & Related Renewable Energy Industries; and
3. Building & Design

The data for these profiles are largely taken from EMSI (4th quarter update of 2010) and the latest information from EDD.

Industry Cluster #1: Agriculture & Tourism

Agriculture and tourism are two keystone industries for the Central Coast. Conservatively, they account for 15 percent of all the jobs in the region, and it is probably closer to 25 percent when you include all the indirect employment generated from the revenue generated from this industry cluster.

Nationally and statewide employment in agriculture is expected to decline over the next five years, while we expect to see a small overall increase in employment in the region, while overall wages in agriculture in our region are considerably higher than the national average and even slightly higher than California's average.

Tourism on the other hand is expected to see relatively strong employment growth over the next five years, nationally, statewide and even more so in the Central Coast. Overall wages, in this industry for Central Coast are low, even when compared to national and state averages.

The occupational data for both industries is not very insightful and needs additional analysis. Almost two-thirds of agricultural employment is placed in the low paying occupation of miscellaneous agricultural worker with tourism positions not much better in their descriptions of employment opportunities.

Industry Definition

1. **Agriculture** combines traditional crop and animal production with directly related support activities for agriculture and forestry. The industries in our definition include;
 - Support Activities for Crop Production
 - Crop and animal production
 - Support Activities for Animal Production

2. **Tourism** combines accommodations, food services, transportation related to tourism, and beverage manufacturing. The industries in our definition include;
 - Full-Service Restaurants
 - Traveler Accommodation
 - Other Amusement and Recreation Industries (Golf)
 - Beverage Manufacturing (Wine, Beer & Distilleries)
 - Spectator Sports
 - Museums, Historical Sites, and Similar Institutions
 - Drinking Places (Alcoholic Beverages)
 - Performing Arts Companies
 - Scheduled Air Transportation
 - Gambling Industries
 - Rail Transportation
 - Scenic and Sightseeing Transportation, Water
 - Amusement Parks and Arcades
 - Scenic and Sightseeing Transportation, Land
 - Scenic and Sightseeing Transportation, Other

Employment & the Regional Economic Assessment

Agriculture and tourism account for 150,000 jobs in the Central Coast and that is expected to grow to over 160,000 in 2015.

Table 15 Central Coast Agriculture & Tourism: Baseline Employment Forecast

Central Coast Employment	2010 Employment	2015 Employment Forecast	% Change from 2010 to 2015
Agriculture	84,619	85,527	1.1%
Tourism	69,534	76,316	9.8%
Combined Employment	154,153	161,843	5.0%
% of Central Coast Employment	14.9%	14.6%	

The region shows a high concentration in all of the agricultural sub-industries, but particularly with support activities for crop production. For tourism, the Central Coast is most concentrated in traveler accommodations and beverage manufacturing (wineries, breweries and distilleries).

Table 16 Central Coast Agriculture & Tourism: Relative Industry Concentration

Central Coast: Industry Concentration	2010 Location Quotient (CA)	2015 Location Quotient (CA)	Change from 2010 to 2015
Agriculture	4.46	4.74	0.28
Crop and animal production	3.64	3.79	0.15
Support Activities for Crop Production	4.59	4.76	0.17
Support Activities for Animal Production	2.36	2.48	0.12
Tourism	1.16	1.19	0.03
Traveler Accommodation	1.68	1.73	0.05
Beverage Manufacturing	1.67	1.84	0.17
Museums, Historical Sites, and Similar Institutions	1.47	1.53	0.06
Other Amusement and Recreation Industries (Golf)	1.38	1.40	0.02
Scenic and Sightseeing Transportation, Land	1.18	1.12	-0.06
Full-Service Restaurants	1.14	1.14	0

The table below shows overall employment in the Central Coast for agriculture and tourism, as well as the average wages for each industry and the direct economic impact by multiplying the two.

Table 17 Central Coast Agriculture & Tourism: Wages & Direct Economic Impact

Central Coast Employment	2010 Employment	2010 Average EPW (Salary + Benefits)	2010 Direct Economic Impact (\$1,000's)
Agriculture	84,619	39,793	3,367,244
Tourism	69,534	27,449	1,908,639
Combined Employment	154,153	34,225	5,275,883

Of the four counties, Monterey has the highest number of agricultural jobs, while Ventura has the highest tourism employment.

Table 18 Central Coast Agriculture & Tourism: County Employment

Central Coast Employment	2010 Employment	2010 Establishments	Avg. Emp. per Establishment
Agriculture	84,619	2,217	38.2
Monterey	40,520	625	64.8
San Luis Obispo	6,048	350	17.3
Santa Barbara	15,677	594	26.4
Ventura	22,374	648	34.5
Tourism	69,534	3,162	22.0
Monterey	17,821	741	24.0
San Luis Obispo	13,120	693	18.9
Santa Barbara	17,831	785	22.7
Ventura	20,762	943	22.0
Combined Employment	154,153	5,379	28.7
Monterey	58,341	1,366	42.7
San Luis Obispo	19,168	1,043	18.4
Santa Barbara	33,508	1,379	24.3
Ventura	43,136	1,591	27.1

National & Statewide Trends

Nationally and statewide agricultural employment is expected to decline, while overall regional employment in agriculture will only slightly increase over the next five years.

Table 19 Central Coast Agriculture: National & Statewide Trends

Statewide & National Employment Trends: Agriculture	2010 Employment	2015 Employment Forecast	% Change from 2010 to 2015	2010 Earnings Per Worker
Central Coast Employment: Agriculture	84,619	85,527	1.1%	\$39,793
CA Employment: Agriculture	404,870	395,452	-2.3%	\$39,065
USA Employment: Agriculture	3,192,158	3,087,062	-3.3%	\$28,123

The tourism industries are expecting to see considerable employment growth over the next five years with local employment growth surpassing statewide and national expectations. Average wages in the region are low in tourism, even by industry averages nationally and within California.

Table 20 Central Coast Tourism: National & Statewide Trends

Statewide & National Employment Trends: Tourism	2010 Employment	2015 Employment Forecast	% Change from 2010 to 2015	2010 Earnings Per Worker
Central Coast Employment: Tourism	69,534	76,316	9.8%	\$27,449
CA Employment: Tourism	1,140,635	1,249,413	9.5%	\$32,197
USA Employment: Tourism	10,090,834	10,988,448	8.9%	\$28,776

Key Occupations

Almost two-thirds of all agricultural employment is placed in the miscellaneous agriculture worker category, with a median hourly wage of \$9.28, just a little bit above minimum wage. The next two largest agricultural occupations in the Central Coast are expecting to lose jobs over the next five years.

Table 21 Central Coast Agriculture: Most Employed Occupations

Central Coast: Agriculture Occupations (Overall)	2010 Employment	2015 Employment Forecast	# Change from 2010 to 2015	2010 Median Hourly Earnings	% of Industry Employment
Miscellaneous agricultural workers	53,810	55,649	1,839	\$9.28	63.6%
Farm, ranch, and other agricultural managers	8,308	7,709	(599)	\$34.70	9.8%
Farmers and ranchers	5,793	5,404	(389)	\$13.03	6.8%
Supervisors, farming, fishing, and forestry workers	1,942	2,033	91	\$17.26	2.3%
Packers and packagers, hand	1,499	1,548	49	\$9.28	1.8%
Graders and sorters, agricultural products	1,491	1,640	149	\$8.95	1.8%

Table 22 Central Coast Agriculture: Fastest Growing Occupations

Central Coast: Agriculture Occupations (Growth)	2010 Employment	2015 Employment Forecast	# Change from 2010 to 2015	2010 Median Hourly Earnings	% of Industry Employment
Miscellaneous agricultural workers	53,810	55,649	1,839	\$9.28	63.6%
Graders and sorters, agricultural products	1,491	1,640	149	\$8.95	1.8%
Supervisors, farming, fishing, and forestry workers	1,942	2,033	91	\$17.26	2.3%
Nonfarm animal caretakers	690	767	77	\$12.71	0.8%
Packers and packagers, hand	1,499	1,548	49	\$9.28	1.8%

The food industry has the top two most employed and fastest growing occupations in tourism. Most of tourism's larger and faster growing jobs in the Central Coast are low skill, low wage positions.

Table 23 Central Coast Tourism: Most Employed Occupations

Central Coast: Tourism Occupations (Overall)	2010 Employment	2015 Employment Forecast	# Change from 2010 to 2015	2010 Median Hourly Earnings	% of Industry Employment
Waiters and waitresses	12,336	13,244	908	\$9.02	17.7%
Cooks, restaurant	5,176	5,568	392	\$12.05	7.4%
Maids and housekeeping cleaners	4,793	5,181	388	\$9.15	6.9%
Dishwashers	3,440	3,821	381	\$9.01	4.9%
Dining room attendants and bartender helpers	2,621	2,790	169	\$8.98	3.8%
Hotel, motel, and resort desk clerks	2,130	2,425	295	\$10.82	3.1%
Hosts and hostesses - restaurants	2,121	2,276	155	\$9.11	3.1%
Fitness trainers and aerobics instructors	2,032	2,421	389	\$15.42	2.9%

Table 24 Central Coast Tourism: Fastest Growing Occupations

Central Coast: Tourism Occupations (Growth)	2010 Employment	2015 Employment Forecast	# Change from 2010 to 2015	2010 Median Hourly Earnings	% of Industry Employment
Waiters and waitresses	12,336	13,244	908	\$9.02	17.7%
Cooks, restaurant	5,176	5,568	392	\$12.05	7.4%
Fitness trainers and aerobics instructors	2,032	2,421	389	\$15.42	2.9%
Maids and housekeeping cleaners	4,793	5,181	388	\$9.15	6.9%
Dishwashers	3,440	3,821	381	\$9.01	4.9%
Hotel, motel, and resort desk clerks	2,130	2,425	295	\$10.82	3.1%

Industry Cluster #2: Energy & related Renewable Energy Industries

Energy and the Related Renewable Energy Industries (Energy & RREI) represent one of the most direct opportunities for development of the regional green economy. Solar and photovoltaic energy generation, energy efficiency, smart grid technology and wind energy all represent important pillars of the emerging green economy. In the Central Coast economy, many of the traditional energy employers are expecting to see declining employment, while industries more likely to be connected to renewable energy (other electrical generation) are expecting to see strong employment growth.

Nationally and statewide employment in energy & RREI is expected to increase slightly over the next five years, while the Central Coast expects to see a decline in overall employment in the Energy & RREI cluster. This is a relatively small industry cluster, less than 10,000 total employees, but high average wages and earnings per worker. .

The key occupations in Energy and RREI are largely found in public sector utilities (power plant operator & dispatchers), higher technology manufacturing (assemblers, electronic engineers, sales and customer service representatives) and the solar industry (roofers).

Industry Definition

1. **Energy & Related Renewable Energy Industries (Energy & RREI)** combines traditional energy utilities with those industries that have been shown nationally and statewide to have greater concentration of renewable energy (solar and wind mainly) firms. The industries in our definition include;

- Natural Gas Distribution
- Semiconductor and Related Device Manufacturing
- Residential roofing contractors
- Fossil Fuel Electric Power Generation
- Other Electric Power Generation
- Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers
- Heating Equipment (except Warm Air Furnaces) Manufacturing
- Residential Electric Lighting Fixture Manufacturing
- Nonresidential roofing contractors
- Nuclear Electric Power Generation
- Electric Power Distribution
- Roofing, Siding, and Insulation Material Merchant Wholesalers
- Electric Bulk Power Transmission and Control
- Hydroelectric Power Generation
- Turbine and Turbine Generator Set Units Manufacturing

Employment & the Regional Economic Assessment

Energy & RREI account for less than 10,000 jobs in the Central Coast and that is actually expected to decline by a few 100 jobs by 2015. Overall the industry is expected to see considerable changes in industry employment, where traditional energy industries and manufacturing are declining considerably while newer energy industries are growing.

Table 25 Central Coast Energy: Baseline Employment Forecast

Central Coast Employment	2010 Employment	2015 Employment Forecast	% Change from 2010 to 2015
Energy & Related Renewable Industries	<u>7,889</u>	<u>7,616</u>	-3.5%
% of Central Coast Employment	0.8%	0.7%	

The region shows a mix of industries that are highly concentrated in the region including heating equipment manufacturers, electric lighting fixture manufacturers and other electric power generation while having other related industries with very little relative employment including nuclear power generation, roofing wholesalers and nonresidential roofing contractors.

Table 26 Central Coast Energy & RREI: Relative Industry Concentration

Central Coast: Industry Concentration	2010 Location Quotient (CA)	2015 Location Quotient (CA)	Change from 2010 to 2015
Energy & Related Renewable Industries	1.2	1.17	-0.03
Heating Equipment (except Warm Air Furnaces) Manufacturing	7.4	9.53	2.13
Residential Electric Lighting Fixture Manufacturing	4.19	7.69	3.5
Other Electric Power Generation	4.09	5.55	1.46
Residential roofing contractors	1.47	1.57	0.1
Natural Gas Distribution	1.28	1.27	-0.01
Fossil Fuel Electric Power Generation	1.03	1.03	0
Plumbing and Heating Equipment (Hydronics) Wholesalers	0.93	0.85	-0.08
Semiconductor and Related Device Manufacturing	0.72	0.68	-0.04
Electric Power Distribution	0.67	0.45	-0.22
Nonresidential roofing contractors	0.59	0.48	-0.11
Roofing, Siding, and Insulation Material Merchant Wholesalers	0.41	0.45	0.04
Nuclear Electric Power Generation	0.35	0.14	-0.21

The table below shows overall employment in the Central Coast Energy & RREI, as well as the high average earnings per worker for the industry and the direct economic impact by multiplying the two.

Table 27 Central Coast Energy & RREI: Wages & Direct Economic Impact

Central Coast Employment	2010 Employment	2010 Average EPW (Salary + Benefits)	2010 Direct Economic Impact (\$1,000's)
Energy & Related Renewable Industries	7,889	\$119,080	\$939,422

Of the four counties, Ventura has the highest number of Energy & RREI jobs, while San Luis Obispo has the highest concentration of Energy & RREI employment.

Table 28 Central Coast Energy & RREI: County Employment

Central Coast Employment	2010 Employment	2010 Establishments	Average Employment per Establishment
Energy & Related Renewable Industries	7,889	345	22.9
Monterey	770	53	14.5
San Luis Obispo	2,297	62	37.0
Santa Barbara	1,292	85	15.2
Ventura	3,530	146	24.2

National & Statewide Trends

Nationally and statewide, Energy & RREI employment is expected to remain flat, while overall regional employment in Energy & RREI is expected to decline by a few hundred jobs over the next five years.

Table 29 Central Coast Energy & RREI: National & Statewide Trends

Statewide & National Employment Trends: Energy & RRI	2010 Employment	2015 Employment Forecast	% Change from 2010 to 2015	2010 Earnings Per Worker
Central Coast Employment: Energy	7,889	7,616	-3.5%	\$119,081
CA Employment: Energy	141,860	142,776	0.6%	\$119,551
USA Employment: Energy	1,106,187	1,113,973	0.7%	\$97,662

Key Occupations

Roofers represent the most employed occupation in the Energy & RREI, representing eight and half percent of all jobs in the cluster. Power plant operators, power distributors & dispatchers and customer service representatives are the three fastest growing occupations, accounting for total expected growth of less than 50 jobs in the next five years.

Table 30 Central Coast Energy & RREI: Most Employed Occupations

Central Coast: Energy Occupations (Overall)	2010 Employment	2015 Employment Forecast	# Change from 2010 to 2015	2010 Median Hourly Earnings	% of Industry Employment
Roofers	664	635	(29)	\$21.45	8.4%
Electrical and electronic equipment assemblers	285	232	(53)	\$13.26	3.6%
Customer service representatives	216	228	12	\$16.20	2.7%
Electrical power-line installers and repairers	186	196	10	\$33.98	2.4%
Team assemblers	179	140	(39)	\$12.51	2.3%
General and operations managers	165	154	(11)	\$46.68	2.1%
Control and valve installers and repairers, except mechanical door	159	164	5	\$24.76	2.0%
Electronics engineers, except computer	151	127	(24)	\$47.86	1.9%
Power plant operators	147	170	23	\$30.80	1.9%
Sales representatives, wholesale and manufacturing, except technical and scientific products	136	132	(4)	\$26.32	1.7%

Table 31 Central Coast Energy & RREI: Fastest Growing Occupations

Central Coast: Energy Occupations (Growth)	2010 Employment	2015 Employment Forecast	# Change from 2010 to 2015	2010 Median Hourly Earnings	% of Industry Employment
Power plant operators	147	170	23	\$30.80	1.9%
Power distributors and dispatchers	74	87	13	\$32.02	0.9%
Customer service representatives	216	228	12	\$16.20	2.7%
Electrical power-line installers and repairers	186	196	10	\$33.98	2.4%

Industry Cluster #3: Building & Design Industries

The Central Coast's building and design cluster are responsible for almost all of the green building activity that occurs in the region. This industry represents a broad mix of middle and higher skill occupations with middle to high earnings per worker.

Overall, the industry cluster is expected to recover from the significant job losses seen in the great recession, although the region's industry cluster is not expected to grow as fast as national or statewide industry averages.

Carpenters, construction laborers and construction managers, represent over one-quarter of the jobs in this industry cluster and account for three of the four fastest growing occupations.

Industry Definition

2. **Building & Design Industries** combine traditional construction firms with those industries that are responsible for designing residential (architects) and industrial (engineers) facilities. The industries in our definition include;

- Architectural, Engineering, and Related Services
- Building Finishing Contractors
- Building Equipment Contractors
- Residential Building Construction
- Other Specialty Trade Contractors
- Foundation, Structure, and Building Exterior Contractors
- Nonresidential Building Construction
- Utility System Construction
- Other Heavy and Civil Engineering Construction

Employment & the Regional Economic Assessment

Building & design has over 50,000 jobs in the Central Coast increasing to over 60,000 by 2015.

Table 32 Central Coast Energy: Baseline Employment Forecast

Central Coast Employment	2010 Employment	2015 Employment Forecast	% Change from 2010 to 2015
Building & Design	<u>55,970</u>	<u>60,125</u>	7.4%
% of Central Coast Employment	5.4%	5.4%	

The region shows a high concentration in many of the clusters sub-industries including heavy and civil engineering, specialty trade contractors and residential building construction. At the other end of the spectrum, the region has relatively low employment in nonresidential building contractors and building equipment contractors.

Table 33 Central Coast Energy & RREI: Relative Industry Concentration

Central Coast: Industry Concentration	2010 Location Quotient (CA)	2015 Location Quotient (CA)	Change from 2010 to 2015
Building & Design	0.94	0.94	0
Other Heavy and Civil Engineering Construction	1.26	1.47	0.21
Other Specialty Trade Contractors	1.19	1.21	0.02
Residential Building Construction	1.18	1.19	0.01
Utility System Construction	1.12	0.98	-0.14
Foundation, Structure, and Building Exterior Contractors	1.11	1.06	-0.05
Architectural, Engineering, and Related Services	1.11	1.12	0.01

The table below shows overall employment in the Central Coast for building & design, as well as the average earnings per worker and the direct economic impact by multiplying the two.

Table 20 Central Coast Energy & RREI: Wages & Direct Economic Impact

Central Coast Employment	2010 Employment	2010 Average EPW (Salary + Benefits)	2010 Direct Economic Impact (\$1,000's)
Building & Design	55,970	\$64,810	\$3,627,416

Of the four counties, Ventura has the highest number of building and design jobs, while San Luis Obispo and Santa Barbara have the highest relative concentration of building and design employment in the region.

Table 34 Central Coast Energy & RREI: County Employment

Central Coast Employment	2010 Employment	2010 Establishments	Average Employment per Establishment
Building & Design	55,970	6,140	9.1
Monterey	8,068	1,031	7.8
San Luis Obispo	10,069	1,227	8.2
Santa Barbara	15,206	1,460	10.4
Ventura	22,627	2,422	9.3

National & Statewide Trends

Nationally and statewide building & design employment is expected to increase at close to ten percent over the next five years, while overall regional employment in this industry cluster is only expected to increase by about seven and half percent over the next five years.

Table 35 Central Coast Energy & RREI: National & Statewide Trends

Statewide & National Employment Trends: Building & Design	2010 Employment	2015 Employment Forecast	% Change from 2010 to 2015	2010 Earnings Per Worker
Central Coast Employment: Building & Design	55,970	60,125	7.4%	\$64,810
CA Employment: Building & Design	1,027,991	1,129,472	9.9%	\$71,010
USA Employment: Building & Design	10,049,656	10,956,884	9.0%	\$58,439

Key Occupations

Over one-quarter of building & design employment can be found in three jobs, carpenters, construction laborers and construction managers, all which expect to see strong employment growth over the next five years.

Table 36 Central Coast Energy & RREI: Most Employed Occupations

Central Coast: Building & Design Occupations (Overall)	2010 Employment	2015 Employment Forecast	# Change from 2010 to 2015	2010 Median Hourly Earnings	% of Industry Employment
Carpenters	6,413	6,820	407	\$22.64	11.5%
Construction laborers	5,708	6,313	605	\$17.77	10.2%
Construction managers	3,245	3,427	182	\$24.72	5.8%
Painters, construction and maintenance	2,782	2,958	176	\$19.31	5.0%
First-line supervisors of construction trades	2,549	2,770	221	\$27.19	4.6%
Plumbers, pipefitters, and steamfitters	1,983	2,137	154	\$22.65	3.5%
Electricians	1,974	2,130	156	\$24.16	3.5%
Civil engineers	1,314	1,473	159	\$38.31	2.3%
Drywall and ceiling tile installers	1,253	1,231	(22)	\$20.74	2.2%
Architects, except landscape and naval	1,016	1,044	28	\$23.86	1.8%
Managers, all other	1,006	1,044	38	\$16.95	1.8%
Cement masons and concrete finishers	1,000	1,097	97	\$23.14	1.8%
Operating engineers & construction operators	969	1,072	103	\$28.76	1.7%

Table 37 Central Coast Energy & RREI: Fastest Growing Occupations

Central Coast: Building & Design Occupations (Growth)	2010 Employment	2015 Employment Forecast	# Change from 2010 to 2015	2010 Median Hourly Earnings	% of Industry Employment
Construction laborers	5,708	6,313	605	\$17.77	10.2%
Carpenters	6,413	6,820	407	\$22.64	11.5%
First-line supervisors of construction trades	2,549	2,770	221	\$27.19	4.6%
Construction managers	3,245	3,427	182	\$24.72	5.8%
Painters, construction and maintenance	2,782	2,958	176	\$19.31	5.0%
Civil engineers	1,314	1,473	159	\$38.31	2.3%
Electricians	1,974	2,130	156	\$24.16	3.5%
Plumbers, pipefitters, and steamfitters	1,983	2,137	154	\$22.65	3.5%
Office clerks, general	900	1,006	106	\$0.12	1.6%
Operating engineers & construction operators	969	1,072	103	\$28.76	1.7%